Better Homes and Gardens®

WOOD

THE MAGAZINE FOR HOME WOODWORKERS

$3.50

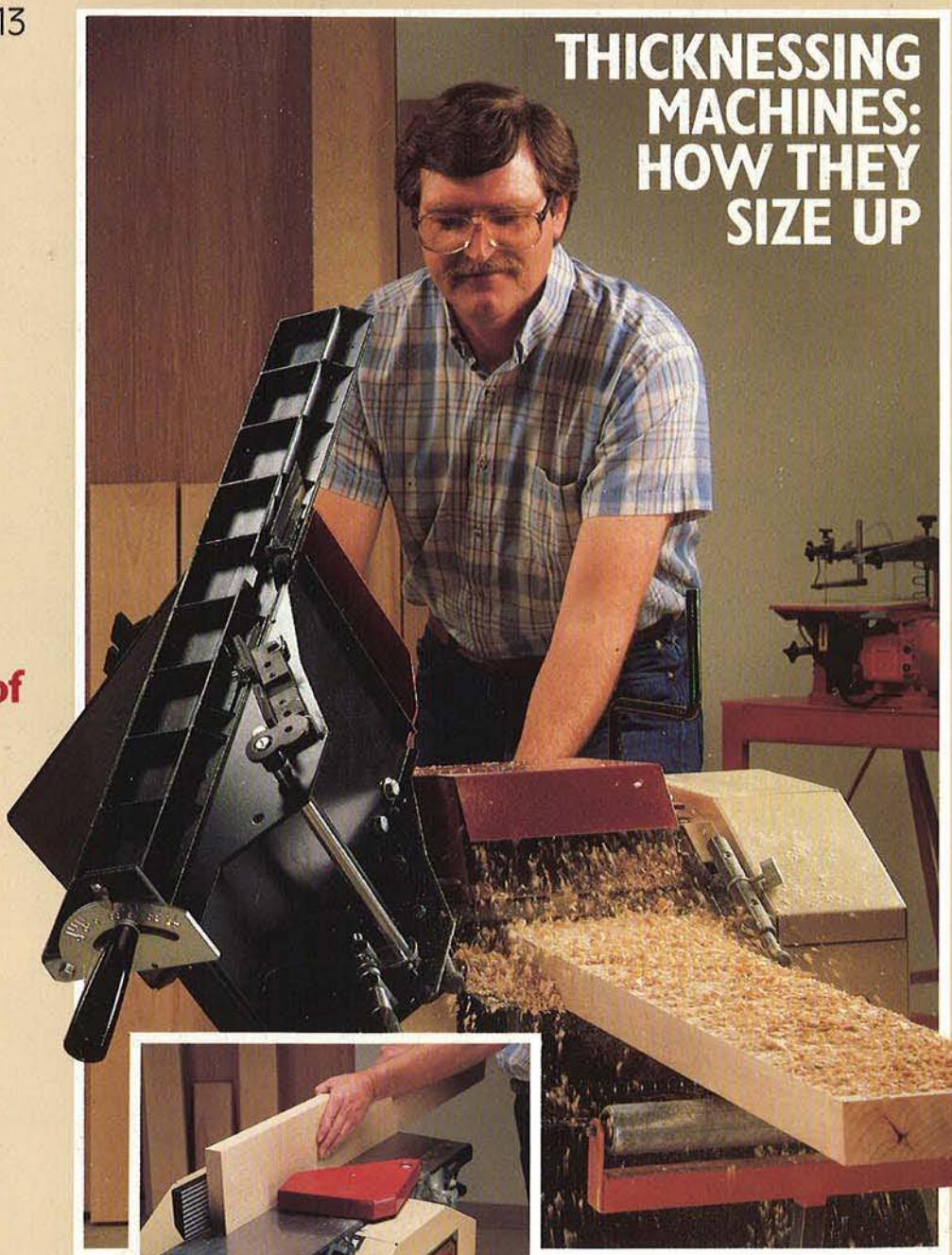
OCTOBER 1986 • ISSUE NO. 13
Display until October 14

MORTISE AND TENON JOINERY
Use our router jig to make super-strong, snug-fitting joints

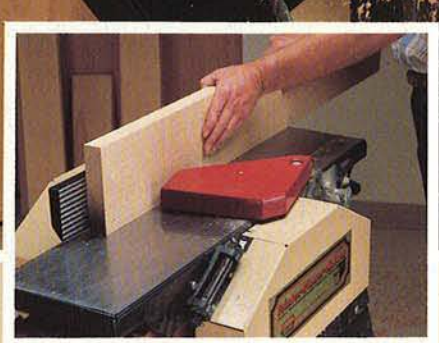
WOODWORKERS' STANDARDS
Kitchen cabinets: We give you dimensions and planning tips

BEAUTIFUL FIGURED WOODS
A close-up look at 7 of the forest's finest

PLUS THESE PROJECTS:
Cedar-lined chest
Mallard mug rack
Kids' play furniture
Jewelry case
Drum-sanding table

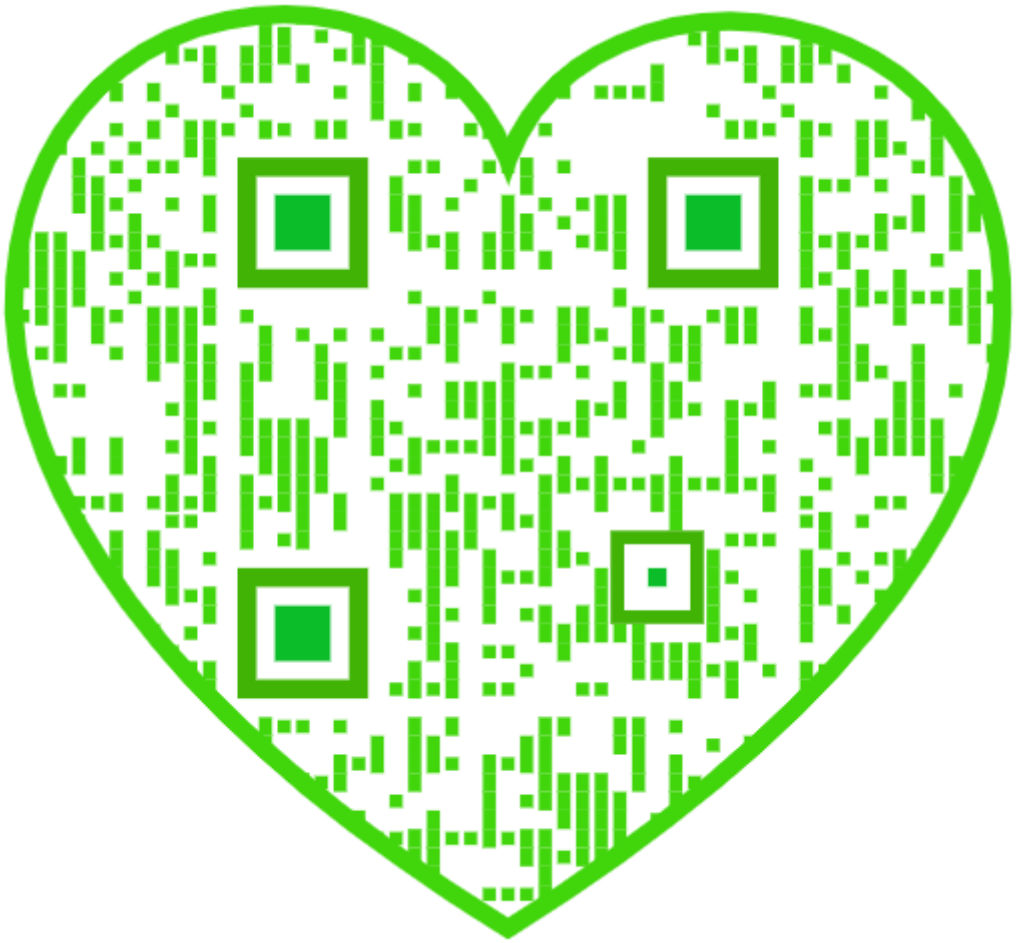


THICKNESSING MACHINES: HOW THEY SIZE UP



Big 6-page report begins on page 56

10
14005 14072



On every Heavy Duty Wood Shaper we build between now and December, we're leaving something off.

$700 off.

For the next couple of months, we'll be offering our most popular Heavy Duty Wood Shaper* for $1499—$700 off suggested retail.

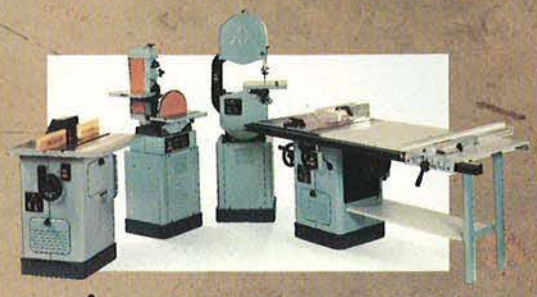
We're cutting back the price. But never cutting back on American-made quality.

In fact, recently we've done more putting on than taking off. We've given Delta machines a sleeker finish, streamlined trim, handier controls. They're sturdier and handsomer than ever. But they work the same. Beautifully.

Our shaper still has two spindle speeds (7,000 and 10,000 rpm) to handle just about any shaping operation. It still has independently adjustable fence halves. And a big 28" x 27" table for stability.

Nope, we didn't change it much because we didn't think we could make it much better. So we settled for making it a much better deal.

Call toll-free for the name of your participating Delta distributor: Delta International Machinery Corp., 800/438-2486 (in PA, 800/438-2487).



DELTA

Building On Tradition

Offer good only on sales in the continental U.S., Alaska and Hawaii, from September 1 to December 31, 1986.

*Model #43-375 with 3HP, 230V, 1Ph motor and LVC controls.

When you're proud of your work, it shows

If you're like a lot of people, you seek out hobbies and leisure activities that reflect your personality and creativity. That's why many have found woodworking to be the perfect outlet. It lets you express your creativity from the first time you pick up a piece of wood. From the simplest knickknacks and toys to elaborate wall units and bookcases, it's a hobby where a project's completion is only the start of the rewards.

It's the glow that comes from seeing the reaction of family and friends. It's the warm feeling you get from projects you give to your church or favorite charity to raise funds. It's knowing that what you made truly reflects your personality, far more than ready-made goods ever could.

Shopsmith® can help you be the best possible woodworker.

At Shopsmith we have the tools, the products and support you need to fully explore woodworking as an outlet for your creativity.

Take the Shopsmith MARK V, for instance. The original multipurpose woodworking tool, the MARK V gives you the five most needed power tools — a table saw, vertical drill press, horizontal boring machine, disc sander and lathe — in one compact unit. It's an entire woodworking system, with precision, adaptability and quality built in. So, with very little practice, you'll be able to concentrate on the enjoyable aspects of woodworking — and leave the labor to the machine.

All the accessories and know-how you need.

The MARK V is only part of the Shopsmith story. We can also supply you with almost every woodworking product and accessory you need. Take advantage of the convenience of shopping by mail or stop by the Shopsmith Store near you for products, education and invaluable free advice.

Your satisfaction is our goal.

We back all our products with an ironclad guarantee and warranty. There's a toll-free number you can call with your woodworking questions and problems. We're committed to your woodworking education through owner's manuals, classes, seminars, magazines and catalogs. All this is part of the Shopsmith Difference, the reason Shopsmith is for better woodworkers and those who want to be.

Ask for FREE Information and Booklet.

To find out more about the rewards and the satisfactions of woodworking, call or mail the coupon below. We'll rush you a Free MARK V Information Kit plus a copy of *How To Determine Your Best Power Tool Buy. You're under no obligation. Do it today!*

Call toll-free 1-800-228-5110
In Nebraska, 1-800-642-8788.

Shopsmith Inc.
For better woodworkers and those who want to be.
6640 Poe Avenue
Dayton, Ohio 45414-2591

© Shopsmith, Inc., 1985
Shopsmith® is a registered trademark of Shopsmith, Inc.

Quality woodworking tools made in the U.S.A.

☐ **YES,** please send me a FREE Information Kit, and a copy of *How To Determine Your Best Power Tool Buy.* I am under no obligation.

Name _____

Address _____

City _____

State _____ Zip _____

☐ I currently own a Shopsmith power tool.

Mail to: Shopsmith, Inc., 6640 Poe Avenue, Dayton, Ohio 45414-2591

Dept. 379W

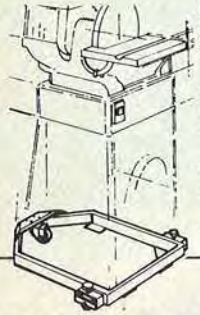
NOW! REDUCE THE RISK AT YOUR TABLE SAW

folds down neatly

WITH THE NEW MOBILE™ SAWING CENTER

OUTFEED ROLLERS
- safe, accurate sawing
- handle panels with ease
- available in 15" and 37" widths
- dual-position table

AND INCREASE FLOOR SPACE



MOBILE MACHINE BASES
- increase shop working area
- maximize usable floor space
- 3 point base will not rock
- locking wheels
- makes machine so easy to use and store
- over 80 standard models

PLANER STAND WITH ROLLERS
- raises planer to proper working height
- provides machine mobility
- five-fold increase in workpiece support
- storage is a snap

NEW

ROLLERTABLE
Rock Solid Support
- adjustable
- portable
- use at any machine

PEDESTAL ROLLER

Discover HTC's many unique products designed only with you, the dedicated woodworker in mind. Find out how you can make your machining safer, increase working area of your shop and accomplish nearly impossible tasks easily, quickly and accurately - **all by yourself!**

CALL TODAY!

HTC PRODUCTS, INC.
120 E. HUDSON S-8
ROYAL OAK, MI 48067
(313) 399-6185

HTC MAKES IT MOBILE

1-800-624-2027 ext. 112

Better Homes and Gardens®

WOOD

OCTOBER 1986 **ISSUE NO. 13**

WOOD PROFILE

EASTERN RED CEDAR: FAVORED FOR FRAGRANCE AND FLAVOR 31

People love it, moths hate it, and no martini would be complete without a hint of this ancient, aromatic juniper.

CRAFTSMAN CLOSE-UP

A PENCHANT FOR PERIOD PIECES 32

Bespectacled Ken Williamson of South Hadley, Massachusetts, teaches college chemistry, but his passion is the Queen Anne, Chippendale, and Federal-era reproductions he creates in his basement workshop.

SHOP-TESTED TECHNIQUES

BASIC MORTISE AND TENON JOINERY 36

Come on, give it a try! You don't have to be a pro to make this super-strong, good-looking joint — especially with our special mortising jig.

FASCINATING FIGURE: A GLIMPSE AT 7 OF THE FOREST'S FINEST 42

What makes an exquisitely figured board so unique? Here's a close-up look at bird's eye, fiddleback, burl, crotch wood, and more of these beautiful accent woods — plus the stories behind them.

AN HEIRLOOM CHEST TO CHERISH 46

Cedar lining inside and an oak frame outside make the perfect combination in this clean-lined chest, fortified with sturdy mortise and tenon joinery.

DUST-BUSTIN' DRUM-SANDING TABLE 52

This special table with its vacuum-hose attachment keeps things cleaner around the drill press, and lets you edge-sand with precision.

TOOL BUYMANSHIP

MILL IT *YOUR* WAY WITH A THICKNESSING MACHINE 56

Need some stock milled to exact thickness for your next project? You can do it, plus a whole lot more, with a versatile thicknesser.

(That's a Foley Belsaw 684 pictured on our cover, and a Shopsmith 555084 shown at right.)

A LITTLE BIT COUNTRY! MALLARD MUG RACK 62

Add an air of country charm to your kitchen with this outdoorsy pine mug rack, or use it as a coatrack in your entry area.

WOODWORKERS' STANDARDS: KITCHEN CABINETS 64

Cabinets come in all sorts of shapes and sizes — and with good reason. Here are the dimensions and tips you need to tailor your cabinetry project to the people who use your kitchen.

A GEM OF A GIFT! 24-KARAT JEWELRY CASE 68

Any woman appreciates having a special place to keep small jewelry items neatly organized — especially when the unit looks as classy as this.

TEA FOR TWO! TINY TABLE AND CHAIRS 74

Build this play set from just one 4x8 sheet of plywood (we used ribbon-stripe mahogany). You're sure to delight someone special, as we did these two proper young ladies.

SHORT-SUBJECT FEATURES

Talking Back 6
Tips from Your Shop (And Ours) 12
Ask *WOOD* 18
Yesterday's Tools: The Hewing Ax 22
Products that Perform 25
Wood Anecdote: The Saga of Osage Orange .. 29
Project Showcase 54
Bringing Home the Wood 86
Facts About Figure 89
Old Hand Ways: Boat Builders of the Chesapeake 90
Woodworking Tool Shows ... 94
Magazine Customer Service Information 97
Bulletin Board 106

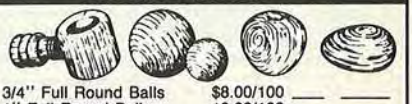
WOODWORKS

		Qty.	Total
3½" Maple Shaker Pegs	$20.00/100		
2½" Medium Shaker Peg	15.00/100		
1-3/4" Mini Shaker Pegs	7.00/100		
3-3/8" Kitchen Mug Pegs	20.00/100		
2-7/16" Tie Rack Pegs	7.00/100		
Bean Pot Candle Cup	17.00/100		

LOW PRICES

Maple Toy Wheels with 1/4 holes			
1 x 3/8 Maple Toy Wheels	$6.50/100		
1-1/4 x 7/16	8.50/100		
1-1/2 x 1/2	10.00/100		
1-3/4 x 9/16	14.00/100		
2 x 5/8	17.50/100		
Axle Pegs For Above	4.50/100		
TOY PARTS ASSORTMENT			
25 Items - 519 Parts	39.95/Each		

HIGH QUALITY



3/4" Full Round Balls	$8.00/100		
1" Full Round Balls	10.00/100		
Nutcracker - White Birch	3.00/Each		
Apples	1.50/Each		
Large Egg 1-7/8"x2-1/2"	35.00/100		
Small Eggs 1-3/8" x 2"	25.00/100		

FAST SERVICE

3/8" Maple Buttons	$2.15/100		
1/2" Maple Buttons	2.25/100		
3/8" x 2" Dowel Pins	2.20/100		
1-1/2" Maple Spindles	9.00/100		
1-1/2" Oak Spindles	12.00/100		
2-1/8" Maple Spindle	14.00/100		
2-1/8" Oak Spindle	18.00/100		

LARGE SELECTION

1/4" x 36" Birch Dowels	$4.25/25		
3/8" x 36" Birch Dowels	6.50/25		
1/2" x 36" Birch Dowels	10.50/25		

QTY. PRICES AVAILABLE

9" x 11" ALUMINUM OXIDE-SANDPAPER

220 Grit	$16.00/100		
180 Grit	16.00/100		
150 Grit	16.00/100		
120 Grit	16.00/100		
100 Grit	16.00/100		

BONUS OFFER

CHECK THIS BOX, AND AS A BONUS WITH ANY ORDER FOR WOOD PARTS, WE WILL SEND YOU A COMPLIMENTARY 8 OZ. BOTTLE OF FRANKLIN TITEBOND WOOD GLUE.

$2.25 VALUE #B9 ☐ CHECK HERE

ORDER NOW

CATALOG $1.00
(Free With Order)

TOTAL FOR GOODS	
TEXANS ONLY ADD 5% SALES TAX	
HANDLING AND INSURANCE	**$3.00**
FINAL TOTAL	

MC OR VISA ☐ CHECK ENCLOSED ☐

ACCOUNT #_____

EXPIRES_____ PHONE_____

NAME_____

SHIP TO_____

CITY/STATE/ZIP_____

817/281-4447

WOODWORKS

4013-A CLAY AVE. • FT. WORTH, TX 76116

DISCOUNT TOOLS

WE OFFER DISCOUNTS UP TO 50% AND MORE ON AMERICA'S BEST NAME BRAND POWER TOOLS

BE WISE — **COMPARE**

Porter Cable Tools

MOD#	DESCRIPTION	List	Sell
100	Router	141	89
126	Plane	265	169
310	Laminate Trimmer	190	124
312	Laminate Trimmer	205	134
330	Block Sander	87.50	54
361	3x24" Blt Sander	260	169
363	4x24" Blt Sander	280	183
690	Router 1½ HP	194	126
9118	Porta Plane Kit	299	199
59381	Hinge Template	199	139

Milwaukee Tools

0222-1	3/8" VSR Drill	146	98
0234-1	1/2" VSR Drill	159	109
0566-1	Drain Cleaner	249	173
1610-1	1/2" Spade Hndl Drill	189	132
1670-1	1/2" Hole Hawg	275	189
3002-1	Rt angl Electricians Drill	253	175
3300-1	Rt ang Magnum Drl	249	169
5399	1/2" Hammer Drill	261	179
6377	7 1/4" worm Drive Saw	259	143
6511	2 Spd Sawzall, case	181	119
6539	Cordless Screwdriver	84	59
6543-1	0-1000 rpm Screwdriver	199	138

Senco Nail Guns In Stock
Call For Discount Prices

Freud Carbide
Blades and Cutters

LU72M010	10"x40T Gen Purp	68.58	34
LU85M010	10x80 T Fine Cutoff	110.88	59
DS308	8" Dado Set	179.90	99
90-100	15pc Router Bit Set	229.00	129
94-100	5pc Router Bit Set	248.00	159

Selected Blades — Cutters by Freud up to 50% off Suggested List Price

Makita Tools

1900BW	3 1/4" Planer Kit	178	89
2401BW	10" Miter Saw	329	189
2708	8 1/4" Table Saw	348	199
3601B	Router D Handle	198	118
3612BR	3HP Plunge Router	318	179
4200N	4 3/8" Trim Saw	168	99
5081DW	Cordless Circ. Saw	192	102
5402A	16" Beam Saw	518	299
6012Hdw	3/8" Cordl Scrudrill	188	94
6510Lvr	3/8" VSR Drill	136	76
6800Dbv	0-2500 rpm Screwdr	144	79
6905B	1/2" Impact Wrench	252	135
6906	3/4" Impact Wrench	528	299
9924B	3x24" Belt Sander	208	124
B04510	Block Sander	86	45
JR3000V	Var Spd Recipro Saw	198	114

Black and Decker Tools

1179	3/8" Drill O-1200	122	69
1980	Cordl Dr. w Clutch	184	99
3051	7 1/4" Worm Dr Saw	246	135
3103	2 Spd Cutsaw	191	89
4010-10	Palm Sander	88	46
6513-09	1/2" Elect. Imp. Wr	179	109

Ryobi Tools

TS251U	10" Miter Saw	329	159
W200S	16 1/4" Beam Saw	499	279
RJI00V	Var Spd Recipro Saw	189	99
E3810	0-2500 Drywall Dr.	119	79
TR30	Laminate Trimmer	119	65
AP10	Planer	689	359

Bostitch Nail Guns
up to 50% off Suggested List Price

PREPAID FREIGHT TO 48 STATES ANY ITEM THIS PAGE

Bosch Power Tools

1581VS	Jig Saw Orb. Action	230	129
1604	Router 1 3/4 H.P.	209	115
1921vsr	Cordless Drill 3/8"	189	99
90-300	3 1/4 HP Router	500	295
1942	Heat Gun	99	59

Delta Carbide
Blades and Cutters

35-600	9"x80T TC&F	97.70	58
35-625	10"x80T TC&F	123.05	76
35-604	9"x64T ATB	88.00	49
35-623	10"x80T ATB	116.00	69
35-677	14"x108T ATB	158.85	89
35-647	12"x72T ATB	145.10	79
35-626	10"x60T ATB	83.65	49
35-560	8" Carb Dado Set	190.00	99

Selected DELTA Shaper Cutters up to 50% off Suggested List Price

Hitachi Power Tools

DIOV	3/8" VSR Drill	118	69
D13	1/2" Spade Hndl Drill	178	99
DRC10	3/8" Cordl Scrudrill	159	74
F20A	3 1/4" Planer	154	69
TR6	Laminate Trimmer	138	83
TR12	3HP Router	299	163
C7SA	7 1/4" Circular Saw	105	65
W6VA	0-2500 Screwdriver	133	79
CRIOV	Var Spd Recipro Saw	179	107

Skil Tools

551	5 1/2" Circular Saw	99	72
77	7 1/4" Worm Dr Saw	240	129
471	1/2" Impact Wrench	disc	139
448	3x24" HD Belt Sndr	disc	259
597	3/8" VSR Drill	96	59
2016-2	3/8" cordl vsr Drill	199	95
1400	4x21 3/4" Belt Sndr	225	157

ABBEY TOOLS

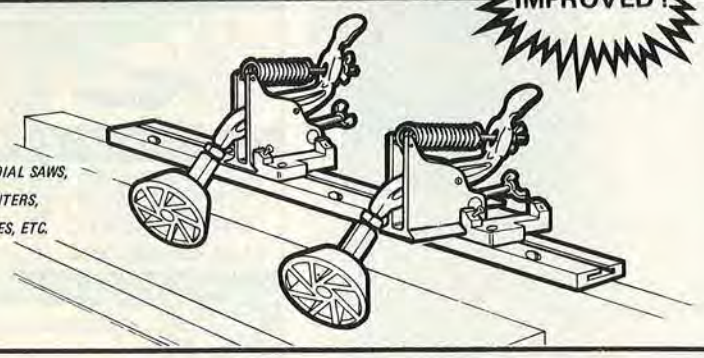
A DIVISION OF ABBEY MACHINERY
616 NORTH BROOKHURST STREET • ANAHEIM, CALIFORNIA 92801
ORDER BY PHONE — WE ACCEPT VISA, MASTER CARD, CHECK, MONEY ORDER
Toll Free 1-800-225-6321 Calif. 1-800-252-2221
Orange County (714) 772-7222
PRICES SUBJECT TO CHANGE WITHOUT NOTICE

A Shophelper PRODUCT

"Those Yellow Wheels . . ."

ANTI-KICKBACK STOCK FEEDER

NEW IMPROVED!



FOR USE ON:
TABLE OR RADIAL SAWS,
SHAPERS, JOINTERS,
ROUTER TABLES, ETC.

- HOLDS STOCK DOWN AND AGAINST FENCE
- MINIMIZE BINDING, CHATTER AND KICKBACK
- QUICKLY AND EASILY MOVED FROM MACHINE TO MACHINE
- ENSURE OPERATOR SAFETY
- WHEELS INTERCHANGEABLE BETWEEN MODELS
- NEW CONTINUOUS HEIGHT ADJUSTMENT FOR IMPROVED PRECISION
- NEW WHEEL DESIGN
- NEW SLOTTED TRACK FOR HORIZONTAL ADJUSTMENT
- NEW HEAVY DUTY SPRING LOADED ARM
- NEW DOVETAIL BRACKET FOR SMOOTHER ADJUSTMENT

Set complete with brackets $79.50 (Additional mounting brackets available.)
24" track, 2 gibs, hardware $29.95
12" track, 1 gib, hardware $16.95

Mfg. by Western Commercial Products
For nearest dealer or to order, call: 800-344-7455; CA 800-828-8833 Or write: P.O. Box 238, Tulare, CA 93275
DEALER INQUIRIES INVITED

Better Homes and Gardens®
WOOD
THE MAGAZINE FOR HOME WOODWORKERS

October 1986 • Vol. 3, No. 5 • Issue No. 13

Editorial / Art Staff
Editor **LARRY CLAYTON**
Managing Editor **DAN KAERCHER**
Art Director **C. L. GATZKE**
Design Editor **JAMES R. DOWNING**
Features Editor **PETER J. STEPHANO**
How-To Editor **MARLEN KEMMET**
Project Builder **JAMES E. BOELLING**
Graphic Designer **PERRY A. McFARLIN**
Administrative Assistant **DARLENE REYNOLDS**

Technical Consultants: **GEORGE GRANSETH** Product Testing; **VERNON U. WARD** Collectible Tools; **PAUL L. McCLURE** Wood Technology

Editorial Director **DORIS M. EBY**
Publishing Director **ADOLPH AUERBACHER**

Editorial Services
Executive Director **DUANE L. GREGG**
Director, Editorial Research **C. RAY DEATON**
Administrative Editor **ROSE ANDERSON**

Publisher **JERRY KAPLAN**
New York Advertising Manager **MARK S. HART**
Promotion / Research Director **THOMAS R. TROLAND**
Circulation Director **WILLIAM HUMMEL**
Production Director **DALE SCHENKELBERG**

Magazine Group Officers
Group President **JAMES A. AUTRY**
Group Vice Presidents
Editorial Director **DORIS M. EBY**
Publishing Director **ADOLPH AUERBACHER**

Corporate Officers
Chairman of the Board **E. T. MEREDITH III**
President **ROBERT A. BURNETT**
Executive Vice President—Corporate Services **JACK D. REHM**
Group Presidents: Magazine **JAMES A. AUTRY**; Broadcasting **W. C. McREYNOLDS**; Real Estate **ALLEN L. SABBAG**; Book **FRED STINES**
Vice Presidents: Corporate Relations **DONALD L. ARNOLD**; General Counsel and Assistant Secretary **THOMAS G. FISHER**; Product Development **NEIL KUEHNL**; Corporate Planning **HERB SCHULTE**; Finance **WILLIAM H. STRAW**; Administrative Services **GERALD D. THORNTON**
Secretary **BETTY CAMPBELL MADDEN**
Treasurer **MICHAEL A. SELL**
Controller **LARRY D. HARTSOOK**

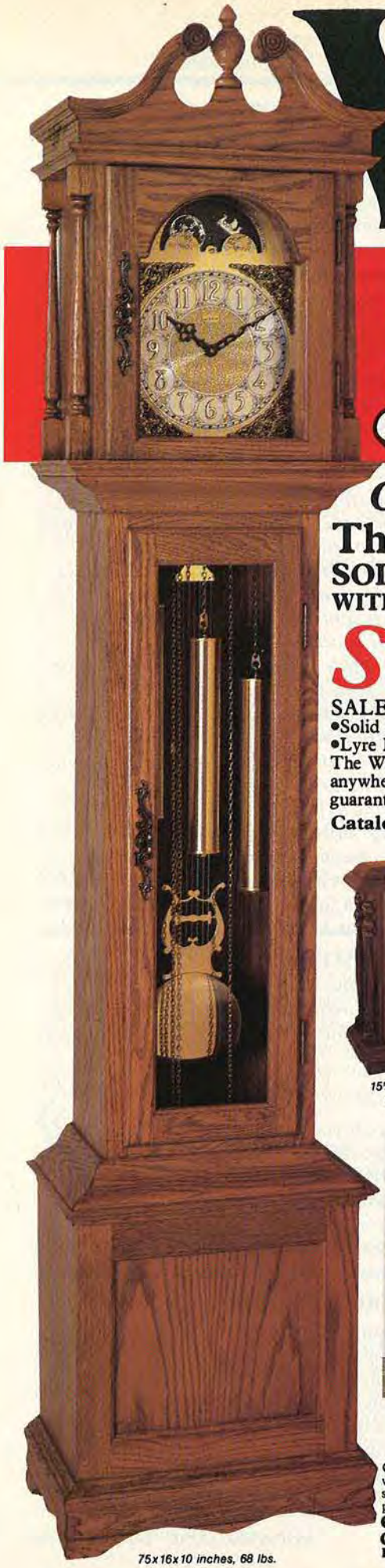
Better Homes and Gardens® WOOD – the magazine for home woodworkers (ISSN-0743-894X) is published bimonthly in February, April, June, August, October, and December by Meredith Corporation, 1716 Locust Street, Des Moines, IA 50336. Second-class postage paid at Des Moines, Iowa. Trademark registered in Canada and Australia. Marca Registrada en Mexico. **SUBSCRIPTION PRICES:** One year $18 in the United States and its possessions. Canada and other countries add $6 per year. **POSTMASTER:** Send address changes to WOOD, 1716 Locust Street, Des Moines, IA 50336. October 1986, Vol. 3, No. 5, Issue No. 13. **CUSTOMER SERVICE:** For service on your magazine subscriptions, including change of address, write to Customer Service Manager ROBERT AUSTIN, P.O. Box 10628, Des Moines, IA 50336. Please enclose a recent address label.

©COPYRIGHT MEREDITH CORPORATION 1986. ALL RIGHTS RESERVED. PRINTED IN U.S.A.

VIKING

SOLID WOOD CLOCK KITS

FAMOUS FOR QUALITY THE WORLD OVER



First Nationwide SALE!

Our Most Popular Kit...

The Wilmington

SOLID ¾" OAK KIT COMPLETE WITH SOLID BRASS MOVEMENT

Save $153 OFF OUR CATALOG PRICE

SALE PRICE INCLUDES: •Solid ¾" Oak Case Kit •Solid brass movement with blue moving moon dial. •Lyre Pendulum •Easy-to-build step-by-step instructions. The Wilmington is the finest value in a grandfather clock anywhere! Every top-quality feature is included. Satisfaction guaranteed or your money refunded. **Includes FREE Vac**

Catalog price was $528 COMPLETE KIT SALE $375

75x16x10 inches, 68 lbs.

FREE $50 POWERFUL SHOP VAC WITH PURCHASE

Order any of the clocks on sale in this ad and receive absolutely FREE this hand utility vacuum. Features: •Made in America •Powerful motor, perfect for workshop, car, kitchen or any home or office cleaning job. •1-year warranty •Complete with 3 tools. •Stores easily in closet or cupboard. Offer good while quantities last—order now!

(Pay only $4 delivery charge)

Save $50

SOLID WALNUT KIT
English Carriage with solid brass key-wound chiming movement.

Easy-to-build. 15 pieces of carefully crafted American Black Walnut wood. Solid brass chiming movement chimes Westminster every quarter-hour and strikes the hour.

Catalog price was $219
COMPLETE KIT SALE $169
Includes FREE Vac

15½x14x5½ inches, 16 lbs.

"Chimes like a full-size grandfather"

Save $84

SOLID ¼" WALNUT KIT
Victorian Teardrop with solid brass movement

This unique kit contains: •Precision cut walnut parts •Solid brass movement with dial, hands, pendulum, brass hardware. •Pre-assembled door & crown •Silk-screened glass.

Catalog price was $233
COMPLETE KIT SALE $149
Includes FREE Vac

23¼x13x5½ inches, 16 lbs.

21½x13¼x5⅝ inches, 7 lbs.

Save $30

Eli Terry

Our newest mantle clock. Solid wood kit with quartz movement & solid brass hardware, brass & wood pendulum.

Catalog price $149
Complete kit sale $119
Includes FREE Vac

PLACE YOUR ORDERS TOLL FREE 1-800-321-1089

ALL MAJOR CREDIT CARDS ACCEPTED.

Want to receive our FREE color catalog mailings? Send your name & address to:

VIKING CLOCK CO., Box 490, Dept. WB486, Foley, Alabama 36536

TURN IT OUT

HEGNER LATHES & DUPLICATORS offer massive capacity, maximum stability, and quick, accurate duplicating action.
AMI — because you never regret quality!

Call or write for complete information:

ADVANCED MACHINERY IMPORTS LTD
P.O. Box 312
New Castle, DE 19720
302 • 322 • 2226 Dept. 93

AT LAST!

THE ONLY ACCURATE FENCE SYSTEM AT AN AFFORDABLE PRICE!

THE *ULTRA*™ FENCE SYSTEM

- PINPOINT ACCURACY
- LAMINATED TABLETOP
- 50" RIP CAPACITY
- LOCKS FRONT AND REAR
- FITS MOST TABLE SAWS

AMERICAN CARBIDE CORPORATION
2281 E. CARSON
LONG BEACH, CA 90208

CALL NOW FOR YOUR NEAREST DEALER...

Call toll free outside California:
1-800-848-4733
In California call:
213-426-3993
Distributor inquiries invited

TALKING BACK

Print this article

We welcome comments, criticisms, suggestions ...even an occasional compliment. The volume of mail we receive makes it impossible to answer every letter, but we promise to do our level best. Send your correspondence to: Letters Editor, *WOOD* Magazine, Locust at 17th, Des Moines, IA 50336.

FINDING THE RIGHT FILLER

(Regarding the article on Flecto's one-day finishing system on pp. 58-59 of the June, 1986 issue): Help! I found the Sherwin Williams Natural Transparent Semi Paste Filler, but only in one-gallon containers. I'm also having trouble locating Varathane in my area.

— Carl J. Ellis, Sr., Chester, Pa.

As we pointed out in the article, we tried three different fillers before coming across one that would accept Varathane properly. If you don't want to invest in a gallon of the Sherwin Williams product (it doesn't come in smaller sizes), we advise you to conduct your own shop test to be absolutely sure.

Visit your paint dealer — and if he's a friend — ask for a small sample of their paste wood filler, or buy a small can. Thin the heavy paste down to a creamy consistency using paint thinner or a mixture of thinner and stain if you prefer. Wipe it on, let it stand at least 30 seconds or until it loses its gloss, and wipe it off. Then, let it dry for about 24 hours, and apply the Varathane to your sample. If you don't notice any flaking or peeling, you're home safe.

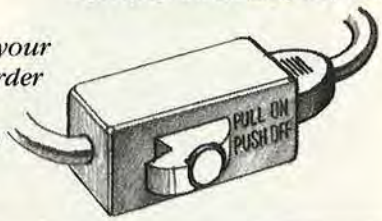
As for finding a Flecto dealer in your area, write or call: Kath Holcombe, Consumer Affairs, Flecto, 1000 45th St., Oakland, CA 94608 (phone 800/227-2944).

SAFETY-SWITCH SOURCE

In your February, 1986 issue, a "Shop Tip" on p. 18 shows a knee-level on/off switch for table-saw safety. Please tell me the name of the switch and where I can purchase it.

— Joseph J. Wick, Elm Grove, Wis.

Joseph, you can call your local Sears store to order their pull on/push off power-tool switch (stock no. 9GT13632, $24.99).



IN CASE OF FIRE...PLAN AHEAD!

I read your magazine with enthusiasm and have learned a lot. I hope my experience will help others.

I had a fire in my shop that wiped out about 85 percent of my power machines, tools, lumber, etc. Fortunately, I had insurance, but the insurance company wanted a complete list of everything I had in my shop. They required the names of machines and tools,

the purchase dates, amount of purchases, and manufacturers. I had none of the above information, which made it difficult to secure adequate and just compensation. Please advise your readers to make a list. (P.S. Don't store the list in your shop, as it may burn up, too!)

— Stewart L. Moyer, Reading, Pa.

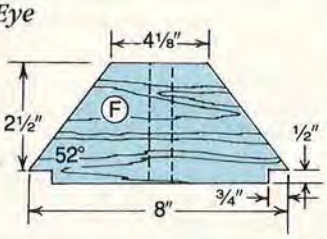
Thanks for some solid advice, Stewart. You may have just saved some woodworker thousands of dollars!

NOW WE SEE THE LIGHT!

(Regarding the redwood lantern project on pp. 58-60 of the April, 1986 issue): I cut my wood according to the bill of materials on p. 61. When I tried to assemble the lantern, I found part F was impossible to make with the dimensions given.

— David Davis, Portage Basques, Newfoundland, Canada

This month, our "Eagle-Eye Reader Award" travels north of the border to our friend David. The drawing to the right lists the correct dimensions for part F. Good catch, David!



COVERING SHARPENING SAFETY

WOOD *heard from a number of readers who apparently learned a lot from our article on "Hollow-Grind Sharpening" (June, 1986, p. 67). However, several readers raised some safety concerns.*

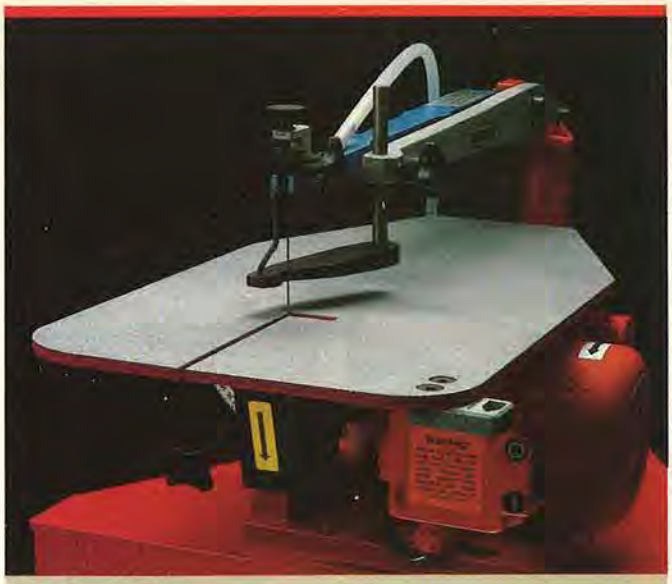
Our cover photograph was a time exposure — the technique that best captured the effect of the sparks. We did not intend to imply that you should sharpen tools one-handed or that you should apply as much pressure as we did to create our sparks. We also advised several times to quench the tool often to prevent excess heat, which can affect Rockwell hardness.

WANTED: MORE BAND-SAW PROJECTS

I could use some help and suggestions about a new tool of mine — the band saw. How do you make those band-saw boxes that you see so often? Could you suggest some other projects using the band saw?

— S. Levine, West Orange, N.J.

We've heard from a number of readers interested in band-saw boxes. First, let us refer you to two articles that appeared in our August, 1985 issue: "Band-Saw Boxes" featuring noted craftsman Richard Rothbard (pp. 26-29); and "Clone Boxes," a project plan (pp. 44-45). Also, stay tuned to WOOD *— hope to discuss band-saw techniques in an early 1987 issue.*



CUT IT OUT

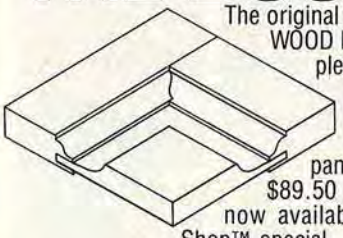
HEGNER PRECISION SAWS combine uncompromising quality, the lowest blade-breakage rate, and the longest proven performance —for the best value in a scroll saw. **AMI — because you never regret quality!**

Call or write for complete information:

ADVANCED MACHINERY IMPORTS LTD

P.O. Box 312
New Castle, DE 19720
302 • 322 • 2226 Dept. 92

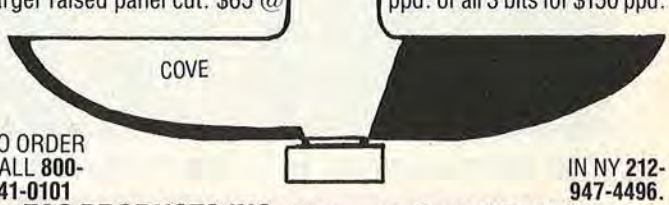
THE DOOR SHOP™



The original Ogee **DOOR SHOP™** as featured in WOOD MAGAZINE (MAY/JUNE 85) is complete with stile & rail, slot & panel raising bits for the ¼" chuck router. Bits are carbide tipped & BB & will make ¾" thru 2¼" thick raised panel doors. Door Shop™ & Manual $89.50 ppd. The ½" shank Door Shop™ now available. Call about our 5 piece Door Shop™ special.

The 37 page **DOOR SHOP™ MANUAL** is clearly written and beautifully illustrated with over 156 detailed drawings covering the complete process of door building. Each section covers proper methods and exact set ups for the router, including how to recognize and correct for errors. There are sections covering Design, Lumber selection, Measuring, Panel Raising, curved & straight Rail and Stile cutting & fitting, Guides, Clamping, Gluing and Finishing. This is the most comprehensive manual out today. When purchasing the Door Shop™ manual for $5.00 you also receive Zac's 26 page Router bit and Shaper cutter catalog free and as an extra bonus you receive a **hardwood door corner** sample with your catalog order. $5.00 rebated with purchase.

Zac's carbide tipped **PANEL RAISER™** router bits come in 3 styles; OGEE, COVE, & PROVINCIAL. All ½" shank bits are 3½" in diam., with BB & give a full 1½" raised panel $90 @ or all 3 bits for $235 ppd. All ¼" shank bits are 2" in diam. & give a 1" or larger raised panel cut. $65 @ ppd. or all 3 bits for $150 ppd.

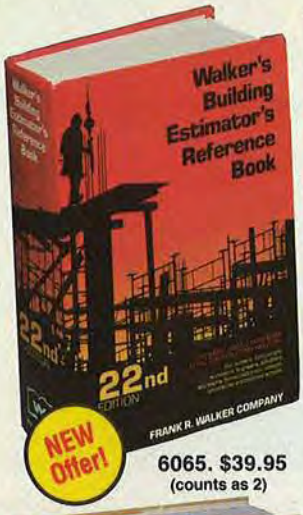


TO ORDER CALL **800-441-0101**

IN NY **212-947-4496.**

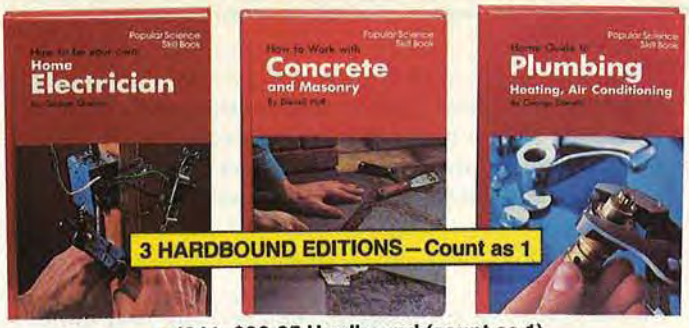
ZAC PRODUCTS INC. 34 Renwick Street NYC, NY 10013

DO IT YOURSELF and do it right!

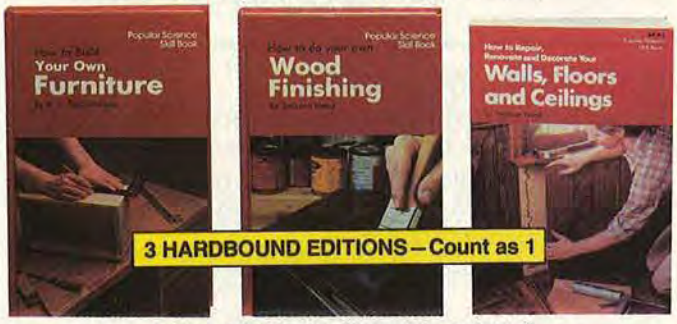


6065. $39.95
(counts as 2)

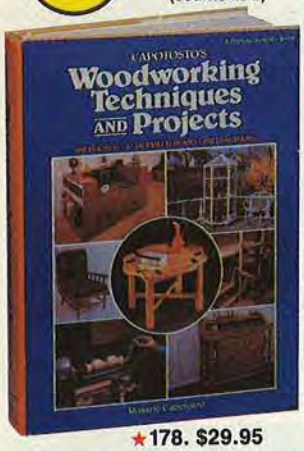
5984. $29.95
(Counts as 2)


Home Electrician
How to Work with Concrete and Masonry
Home Guide to Plumbing
Heating, Air Conditioning
3 HARDBOUND EDITIONS—Count as 1

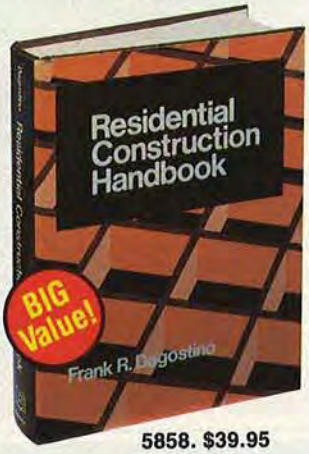
★1841. $26.85 Hardbound (count as 1)



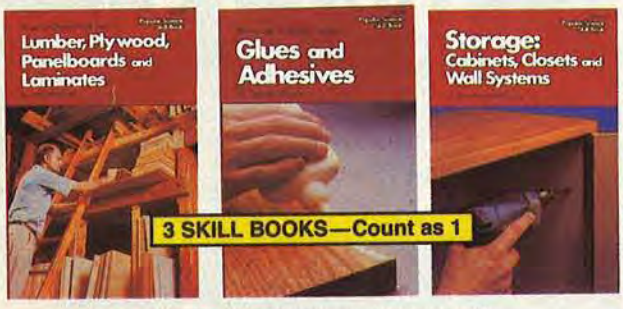
★ 1870. $26.85 Hardbound (count as 1)



★178. $29.95



5858. $39.95


Lumber, Plywood, Panelboards and Laminates
Glues and Adhesives
Storage: Cabinets, Closets and Wall Systems
3 SKILL BOOKS—Count as 1

★ 1208. $17.85 Paper (count as 1)

POPULAR SCIENCE BOOK CLUB—*the #1 book club for today's do-it-yourselfer*—invites you to take your pick of the best new, hard-to-find handyman books published today. Take any 3 for just $3.95! Values up to $96.75! *Nearly 50 books to choose from!*

As a Club member, you get first choice of today's best new, hard-to-find handyman books: ***Quality Books*** from the top how-to publishers...***Authoritative books*** by master builders, woodworkers, home craftsmen, construction experts...***Clear show-how books*** illustrated with step-by-step photos, drawings...everything you need to do it yourself and do it right!

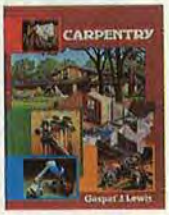
You always choose from cream-of-the-crop homeowner-handyman books on every important do-it-yourself subject: Home Repair & Improvement, Woodworking, Furniture Building, House Building, Wiring, Plumbing, Masonry, Cars & Car Repair, Energy Savers, Home Remodeling...and much more. Club members may also select original custom-written "Popular Science Books" (see titles with ★). Each written on an important do-it-yourself subject...each published specifically for PSBC and offered nowhere else at Club discount!

NO-RISK GUARANTEE: If not completely satisfied with your three joining selections, after 10 days' free trial examination at home, simply return the books at our expense and your membership will be cancelled. Whatever you decide, the Shop Guide is yours to keep ***FREE!***

6022. $16.95

★089. $19.95

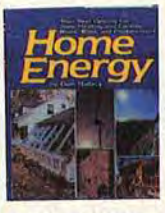
★ 160. $22.50



5898. $35.00
(counts as 2)

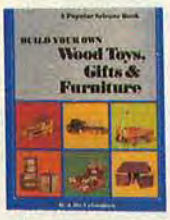
233. $16.95

6033. $27.95
(counts as 2)



5943. $19.95

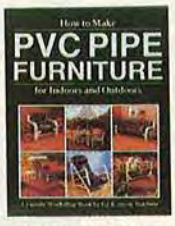
★109. $15.00



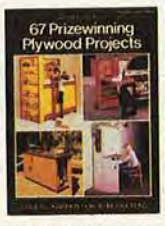
★ 176. $24.95

★105. $17.95

5738. $13.95



6002. $14.95



4501. $27.95
(counts as 2)

★194. $32.95
(counts as 2)

5993. $17.95

6023. $16.95

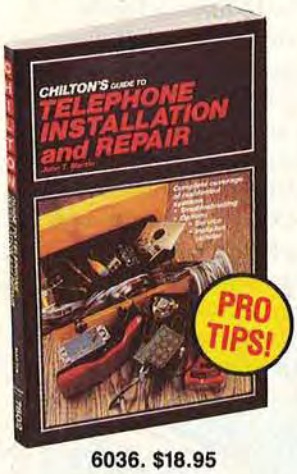
TO GET YOUR BOOKS, MAIL ATTACHED CARD TODAY! If card is missing, write to:

Take any 3 for just $3.95

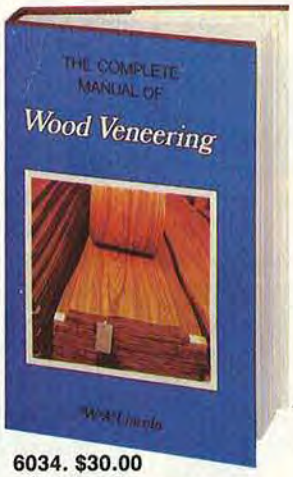
with NO-RISK TRIAL Membership in POPULAR SCIENCE BOOK CLUB

Values up to $96.75!

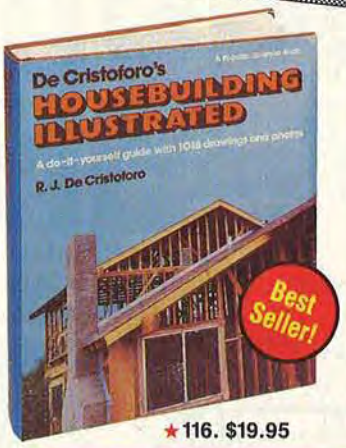
You simply agree to buy just two more regular selections or alternates at regular Club prices within a year.



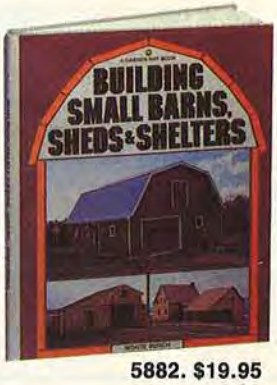
6036. $18.95



6034. $30.00
(counts as 2)



★116. $19.95

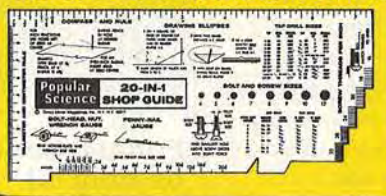


5882. $19.95

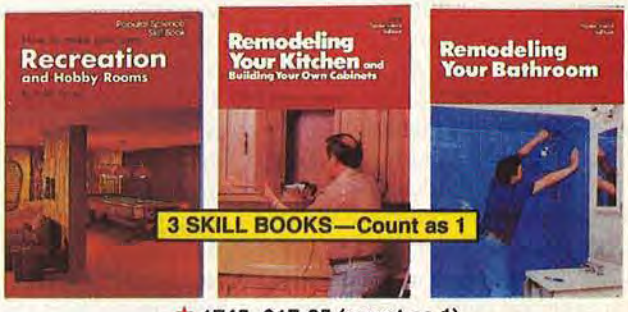
HOW YOUR CLUB WORKS

- First, you choose any three do-it-yourself books shown here for just $3.95 plus delivery and handling. Send no money now. Your books will be sent right away along with your **FREE SHOP GUIDE**.
- Then, about every four weeks (14 times a year), you'll receive a Club Member's bulletin describing the coming new Main Selection and Alternate Books also available. (In addition, up to 4 times a year, you may receive selected mailings on seasonal and annual products of special interest to the membership—many at giant bargains!) If you want the Main Selection only, do nothing. It will be sent automatically. If you don't want the Main Selection, or want an Alternate Book, or no books, simply indicate your wishes on the handy form that comes with the bulletin and return it by the date shown.
- You will always have at least 10 days in which to do this. But in the unlikely event that you don't have 10 days, and you receive an unwanted selection, you may return it at our expense. Your only obligation is to buy just two more selections or alternates at regular Club prices within a year. After that, your membership may be cancelled by either you or the Club.
- **Discounts!** Club books are comparable in every way to the original publishers' editions, yet you may save up to 50% and sometimes more on many special bargains offered each year in the Club. To become eligible for these bargains, mail the postage-free card today!

FREE when you join
POPULAR SCIENCE 20-IN-ONE SHOP GUIDE

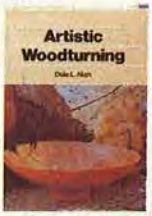


This handy shop guide measures in inches, centimeters. It's also a compass, protractor, drill and chisel grinding gauge, bolt and screw sizer, bolthead and penny nail measurer, more!


Recreation and Hobby Rooms
Remodeling Your Kitchen and Building Your Own Cabinets
Remodeling Your Bathroom
3 SKILL BOOKS—Count as 1

★ 1745. $17.85 (count as 1)

5930. $19.95



5607. $19.95

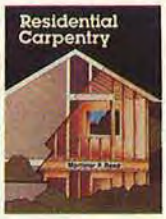
5968. $32.95
(counts as 2)

6016. $24.95

★ 119. $10.95

★085. $24.95

★ 113. $15.95



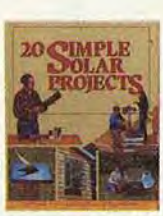
5522. $28.95
(counts as 2)

5872. $21.95

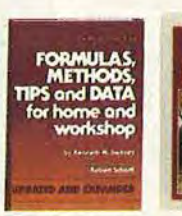
★097. $19.95

6060. $22.95

5739. $17.95



5881. $16.95



★ 042. $17.95

5944. $16.95

5831. $19.95

POPULAR SCIENCE BOOK CLUB, P.O. Box 2006, Latham, N.Y. 12111

Print this article

In woodworking, as in life, no one knows it all. But through experience, we all discover — or stumble onto — better, safer, faster, or easier ways to do things. When we devise interesting tips or techniques, we'll share them with you in this column. And when you send us your favorites, we'll pay you $25 for each submission we publish. No shop tips can be returned. Mail your tips to:

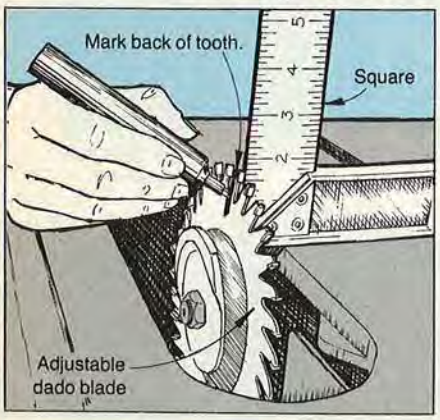
Shop Tips
Better Homes and Gardens®
***WOOD* Magazine**
Locust at 17th
Des Moines, IA 50336

Try this speedy dado-blade setup

Adjustable dados with carbide tips, sometimes called wobble dados, can save you a lot of time in the workshop. The problem is that it's really hard to tell which tooth cuts the farthest to the left and which does the same to the right when you're setting up the cuts.

TIP: Next time, try this solution. Set the dado at its widest setting and align a square against the blade as shown in the drawing, *below.* Move the square away from the blade until just one carbide tip touches the square. Mark the back side of that tip with paint or a permanent marker. Do the same for the left side of the dado blade and mark it with a different color of permanent marker or paint. Presto! You can quickly spot the two outside teeth that determine the width of the cut.

— Wilbur Bray, Logan, Ohio

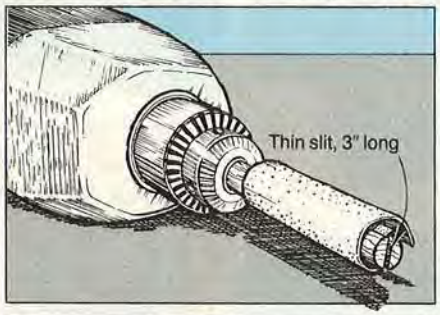


Here's an inexpensive sanding sleeve

It's frustrating to sand the inside of any hole smaller than a drum sander.

TIP: Dowels ⅜″ or smaller are ideal for sanding difficult surfaces. With a thin-blade saw, slit 2″ or 3″ into one end of a 5″ or 6″ dowel. Insert a strip of sandpaper through the slit and wrap the sandpaper tightly counterclockwise around the dowel. Chuck the other end of the dowel and sand.

— Carl Dorsch, Oakdale, Pa.



Putting the squeeze on tung oil

There's nothing more exasperating than discovering that the tung oil you've carefully saved has solidified in a partially filled container.

TIP: Recycled shampoo bottles with a flip-up spout are excellent for storing tung oil and other finishes. Thoroughly rinse and dry shampoo bottles before filling them with finish. Squeeze excess air from the bottle and flip the spout closed. Be sure to label the contents of the bottle with an indelible marker for future reference.

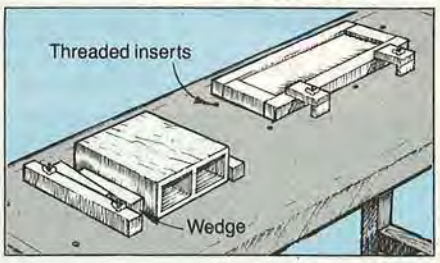
— Ross G. Roepke, Tullahoma, Tenn.

Substitute bench dog

Bench dogs can be a woodworker's best friend, but not all workshop tables were created equal. How can you make your own?

TIP: There's an inexpensive way to build effective hold-down clamps for practically any workbench. Parallel rows of threaded rosan inserts (try 5/16″ #18) placed across your table form this arrangement. As shown in the foreground of the drawing, two strips of wood, two wedges, and four threaded rods and wing nuts complete the clamp. In the background, note how to clamp odd-shaped pieces using a block of wood under secured wood strips.

— John Wolf, St. Joseph, Mich.

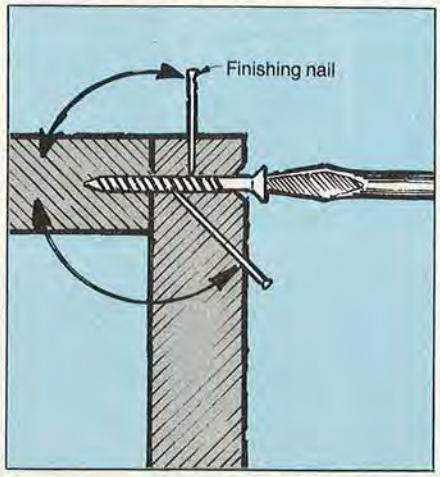


Stripped, but not forgotten

When a wood screw is stripped of its holding power, it seems nothing can back it out of its hole.

TIP: Driving small finish nails from different angles into the screw, as shown in the drawing, is the first step to defeating the troublemaker. The nails provide you with enough bite to back the screw out, and you can grab the head with your fingers or pliers.

— Edwin M. Dery, Monticello, Fla.

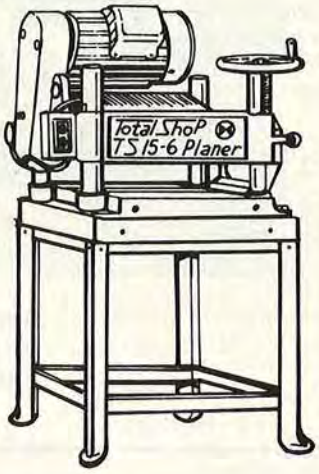


Continued on page 14

Total Shop®

The Shape of Pride

Total Shop Multi-purpose Tool



TS 15-6 Planer

What can compare to the sense of pride you feel when you carefully shape a piece of wood into a timeless treasure? Total Shop understands that feeling because we're proud too, and we have the shape to prove it. Our Total Shop multi-purpose tool and TS 15-6 planer are machines with solid power, versatility and stamina.

Compare Total Shop with Shopsmith® and see for yourself. The Total Shop motor produces nearly 40% more power than the Shopsmith® machine and can be altered by the owner to 220V, this is unavailable with Shopsmith® And in more than 85% of the comparisons, the Shopsmith® machine was priced higher than the Total Shop machine.

Don't overlook the TS 15-6 planer, a rugged machine convertible to 220V by the owner, optional stand and dust collector available, available with 2HP or 5HP motor, and a full 15" x 6" board capacity. A proud addition to any shop.

Our 30 minute video demonstration tape (available in VHS or Beta) gives you a look at our products in action before you buy. Send for it now (with a $20.00 refundable deposit) and you'll see what we've been boasting about.

Now available for ALL multi-tool owners! (Total Shop, Shopsmith®, etc.) **An informative 2½ hr. instructional video.** No matter what multi-purpose tool you own, you'll learn more about its set-up, care, and operation. Order today for only **$49.95** (available in VHS or Beta).

Experience the Shape of Pride. Call **1-800-845-9356** (or in S.C. 288-4174) and we'll send you 11 additional reasons why Total Shop is a better buy than Shopsmith® plus our free information pride packet.

☐ **YES!** Please send me your free information pride packet, with 15 reasons Total Shop is the better buy.

☐ Multi-purpose tool

☐ TS 15-6 Planer

☐ **YES!** Please send me the 30 min. demonstration video, I have enclosed a $20.00 refundable deposit.

☐ VHS

☐ Beta

☐ **YES!** I have enclosed $49.95 plus $2.00 shp. & hdl. for the 2½ hr. instructional video on the set-up, care , and operation of my multi-purpose tool.

☐ VHS

☐ Beta

Call Toll Free **1-800-845-9356** or in S.C. 288-4174

Total Shop®

Dept. Q
P.O. Box 16297/Greenville, SC 29606

Name _____

Address _____

City _____

State/Zip _____

Phone _____

FREE SANDING BELTS

DIRECT FROM THE MANUFACTURER

GET SIX FREE BELTS FOR EACH DOZEN ORDERED. All belts are aluminum oxide first quality. Our electronic presses make smooth bump-free splices.

Check your size and how many dozen. We will ship assorted grits unless otherwise specified.

- ☐ 1" x 30" — $12.70/doz.
- ☐ 1" x 42" — 12.75/doz.
- ☐ 1" x 44" — 12.80/doz.
- ☐ 3" x 18" — 13.75/doz.
- ☐ 3" x 21" — 14.25/doz.
- ☐ 3" x 23¾" — 14.70/doz.
- ☐ 3" x 24" — 14.75/doz.
- ☐ 3" x 27" — 15.25/doz.
- ☐ 4" x 21¾" — 16.75/doz.
- ☐ 4" x 24" — 17.25/doz.
- ☐ 4" x 36" — 20.95/doz.
- ☐ 6" x 48" — 26.95/½ doz. (3 FREE)

Other size belts on request.

9" x 11" Paper Sheets

A/O Cabinet Paper

	50/pk.	100/pk.
40-D	☐ $17/pk.	☐ $31/pk.
50-D	☐ 16/pk.	☐ 28/pk.
60-D	☐ 15/pk.	☐ 26/pk.
80-D	☐ 14/pk.	☐ 24/pk.
100-C	☐ 13/pk.	☐ 22/pk.
120-C	☐ 13/pk.	☐ 22/pk.
150-C	☐ 13/pk.	☐ 22/pk.

No Load Finishing Paper

	50/pk.	100/pk.
180-A	☐ $11/pk.	☐ $19/pk.
220-A	☐ 11/pk.	☐ 19/pk.
280-A	☐ 11/pk.	☐ 19/pk.
320-A	☐ 11/pk.	☐ 19/pk.
400-A	☐ 11/pk.	☐ 19/pk.

Wet or Dry S/C Paper

	50/pk.	100/pk.
220-A	☐ $15/pk.	☐ $25/pk.
320-A	☐ 15/pk.	☐ 25/pk.
400-A	☐ 15/pk.	☐ 25/pk.
600-A	☐ 15/pk.	☐ 25/pk.

NEW ITEM!

☐ BELT CLEANING STICK - $6.95

Prompt delivery from stock.
MONEY-BACK GUARANTEE

Shipping Charges - Under $35 add $2.50; $35 or more add $4.00—PA residents add 6% sales tax.

☐ Check or Money Order.
☐ MasterCard ☐ VISA Exp. Date _____
Acct. # _____
Name _____
Address _____
City, State & Zip _____

CALL TOLL FREE
1-800-428-2222
PA Only - 1-800-222-2292

INDUSTRIAL ABRASIVES CO.
643 North Eighth Street
Reading, PA 19603

New Models

Makita
1-800-792-3505 ext. 233
• FREE FREIGHT •

6070DW
⅜" Battery Drill
Variable Speed
Electric Breake
$58

9401
4x24 Belt Sander
with dust bag
$148

3601B Router
¼", ⅜", ½"
Shank Bits
$114

3705 Laminate Trimmer
Offset Base
$110

JV1600 Jig Saw
Variable Speed
$88

9820-2
Blade Sharpener
7 ⅞" wheel
$149

WORKBENCH TOOL CO.
2833 Perry St., Madison, WI 53713

PARKS NEW MODEL 98

Compact, Ready-to-Run 12" X 4" Planer

MADE IN AMERICA

FREE LITERATURE

PARKS WOODWORKING MACHINE CO.
1501 Knowlton Street, P.O. Box 23057, Cincinnati, Ohio 45223, Dept. BHG
Manufacturing quality woodworking machinery since 1887

The best investment for your shop with these built in values:
- PARKS "Full Power" drive motor permits full 1/8" deep cut on the widest boards
- Cast Iron Construction
- Steel Feed Rollers and Bed Rollers
- Ball Bearing Cutterhead
- Microblade Adjustment
- And Much More...

Send for the latest catalog and price information.

TIPS FROM YOUR SHOP (AND OURS)

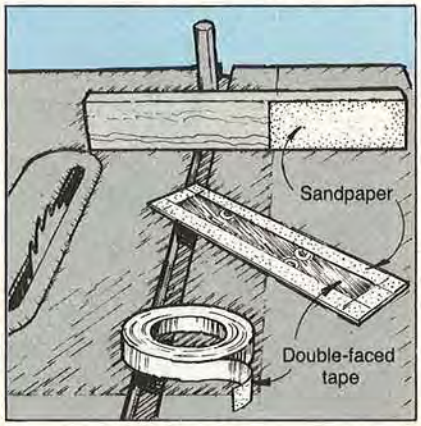
Continued from page 12

Miter nice

The slick metal surface of a miter gauge often is the culprit when wood slides into the tablesaw blade.

TIP: To prevent wood from sliding, use double-faced tape to affix medium- or fine-grit sandpaper to the face of the miter gauge of any power tool. You can easily replace the tape and sandpaper when necessary.

— Bill Roberts, Angola, Ind.

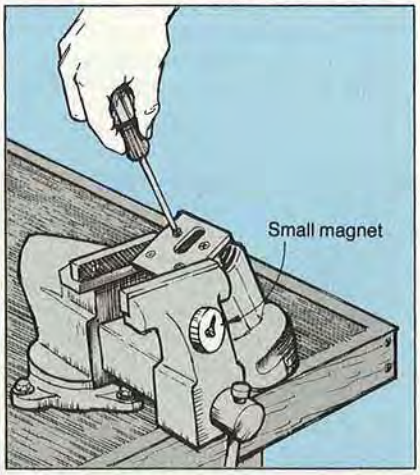


Vise magnetism

Screws, bolts, and other small parts just sort of seem to wander away when you work around a vise.

TIP: Epoxy a small magnet to the side of your vise to keep closer tabs on your footloose hardware. This handy addition to your workshop will save a lot of time looking for metal parts that disappear all too quickly.

— Randy Marras, Chicago, Ill.



Swab idea

You can pull on your ear for a long time before figuring out how to flood stain, varnish, or paint into holes and crevices missed with a brush.

TIP: Cotton swabs are ideal for getting finish or glue into tight areas. The cotton holds an amazing amount of liquid to make fast work of small jobs. And better yet, swabs are inexpensive and disposable!

— Fred Shetzel, Elizabethtown, Ky.

An idea fresh from the oven

Accumulated pitch and gum on saw blades and router bits speeds the dulling process.

TIP: Oven cleaner is an effective, safe, and inexpensive pitch and tar remover. In addition, oven cleaner is less volatile than lighter fluids used for the same purpose by some woodworkers.

— Mike Innis, Atlanta, Ga.

Continued

Save $10,000 or more on your new home. Be your own builder.

No experience needed. Learn at home as NRI shows you how in a professional Building Construction course.

You can save from 10% to 50% of the cost of your new home by building it yourself. And NRI can show you how. NRI's professional course in Building Construction teaches you what you need to know to be a building contractor. And you learn at home in your spare time. Whether you want to build your own home, get a better job, or start your own contracting business, NRI can get you started right.

From Site Selection to Landscaping

By being your own contractor, you save at least 10% of the cost of the typical home right up front. Then, depending on how much of the job you do yourself, you can save up to 50%. NRI takes you through the job from start to finish in 70 lessons full of photos and diagrams to make learning easy. You begin by learning how to pick the best site, learn to read blueprints, estimate costs, follow the job through right to the planting of shrubbery and trees.

Learn Pro Secrets

Nothing's left out. You learn the trade practices and secrets of the pros. Masonry, carpentry, roofing, painting, even plumbing, heating and electrical work. You learn what good work looks like, tip-offs to bad or sloppy work. How to supervise jobs...when to bring in specialists...trade and financial practices...how to keep your job moving on schedule.

Training Built Around Energy-Efficient Home

You learn better because NRI training is practical training. You get over 100 action projects from scale-model construction to building actual framing sections. Lessons and projects are coordinated with a contemporary energy-efficient home designed especially for NRI. You keep these plans to build your own home or select from more than 50 low-cost optional plans.

Includes Regional Seminar

As an exclusive service, graduates may participate in an optional owner/builder seminar. You'll get expert advice on local building codes and conditions, meet builders, learn more about energy efficiency, receive tips on financing. There'll be demonstrations, insider info on remodeling, hands-on programs to take part in.

Send for Free Full-Color Catalog

There's much more to the NRI Building Construction Course. Send the coupon for your free catalog describing all lessons, projects, and opportunities in the building business. See how you can save big money by building your own home or earn big money by building for others. If coupon has been removed, write to NRI Schools, 3939 Wisconsin Avenue, Washington, D.C. 20016.

NRI SCHOOLS
McGraw-Hill Continuing Education Center
3939 Wisconsin Avenue
Washington, DC 20016
We'll give you tomorrow.

For Career courses approved under GI bill ☐ check for details.

Name (Please print) Age

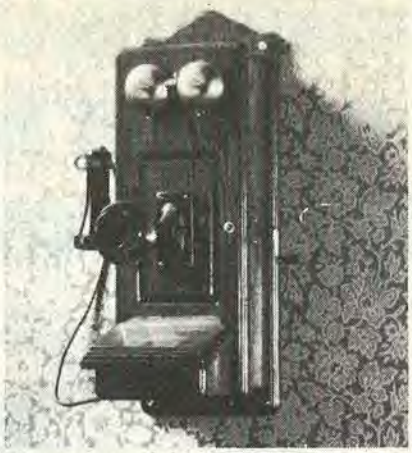
Address

City/State/Zip

Accredited by the National Home Study Council

☑ Please check one free catalog only.
☐ **Building Construction**
☐ Air Conditioning, Refrigeration, Heating and Solar Technology
☐ Small Engine Repair
☐ Appliance Servicing
☐ Locksmithing
☐ Automotive Servicing
☐ Telephone Servicing
☐ Computer Electronics
☐ Satellite Communications
☐ TV/Video/Audio Electronics
☐ Basic Electronics
☐ Bookkeeping

1335-096



Build Your Own Antique Wood Telephone

Dakota Woodworks is the country's largest manufacturer of antique reproduction oak telephones. Now our authentic reproductions are available in kit form.

The kits are available in two skill levels so, whether you're an accomplished woodworker or just beginning, we have a phone for you!

"Pre-cut" phone kits include solid-state electronic components, all solid brass outer hardware and all cabinetry, ready for stain and finish after only light sanding.

"Components Only" kits include the same electronics and hardware, along with blueprints for cabinet construction.

Clip the coupon below for your $2 full-color catalog and pricing information.

Dakota® Woodworks

Kindred, ND 58051 • (701) 428-3105

Name _____

Address _____

City _____

State_____ Zip_____

☐ Enclosed is $2 (check or m.o.)

Please charge my:

☐ Master Card ☐ VISA

Card # _____

Exp. Date _____

Signature _____

"IF YOU BUY A GENERAL WOODWORKING MACHINE SOMEWHERE ELSE YOU'LL PROBABLY PAY TOO MUCH."
J. Philip Humfrey

Every General machine receives and is shipped with Humfrey's all-points inspection report.

CALL TOLL FREE 1-800-387-9789

#350
10" Table Saw
$1345. US FREIGHT COLLECT
3 HP motor, Magnetic switch

#1180-1
6" Jointer
$765. US FREIGHT COLLECT
1 HP motor, Manual switch

#160-2
Variable Speed Lathe
$1095. US FREIGHT COLLECT
1 HP motor, Manual switch

#490-1
15" Bandsaw
c/w Base
$845. US FREIGHT COLLECT
1 HP motor, Manual switch

SIMILAR SAVINGS ON OTHER GENERAL MACHINES

J. Philip Humfrey Ltd.

We sell more General year after year – the reason is value – we satisfy our customers!

CATALOG $2.00 (Refundable from order)
3241 KENNEDY ROAD, UNIT 7
SCARBOROUGH, ONTARIO M1V 2J9

VISA MasterCard

MAKITA • RYOBI • FREUD • POWERMATIC • PORTER CABLE • MAKITA • FREUD • HITACHI • POWERMATIC • RYOBI • SANBORN AIR COMPRESSORS • RYOBI • POWERMATIC • HITACHI

"LOOK WHAT WE FOUND FOR YOU"

2 bag, mobile stand (4 casters) 1PH 2HP 110/230v, 1182cfm, ALL STEEL, 5" main opening with "Y" and (2) 4" openings, wt. 140lbs., List—$399

BMS502
Dust Collector
SALE $369 Freight Paid
Warranty—12 Months/1200 Hours

Call us for the lowest — Powermatic Prices! —

BRATTON INTERNATIONAL MACHINERY
1015 Commercial St. ■ Box 20408W
Tallahassee, FL 32316 ■ 904/222-4842
NAT'L WATS 1-800-874-8160
FLORIDA WATS 1-800-342-2641
VISA/MasterCard (Subject to 3% surcharge)
Free catalog w/purchase or send $3.

TIPS FROM YOUR SHOP (AND OURS)

Continued from page 15

Sandpaper saver

Sandpaper and patience quickly wear out when you smooth chair rungs, spindles, and other curved surfaces.

TIP: Extend the life of your sandpaper by fortifying the sandpaper with duct or masking tape as a backing. You may need to use some tin snips or heavy shears to cut the reinforced sandpaper.

— Dr. Donald A. Keiser, Saginaw, Mich.

Rolls-Royce stop block

Stop blocks come in real handy when you want to cut several pieces to the same length. But you usually have to move the block to ensure that both ends are squared.

TIP: With the gate closed, position and clamp the block to the fence so that it's the exact finished length of the pieces away from the blade. Open the gate, position the workpiece, and cut. Then close the gate, flip the workpiece end for end, and make a final cut. The movable, hinged end gate of this stop block works on either side of a radial-arm or table-saw blade.

— From the* WOOD *Shop

Your home workshop can PAY OFF ... ...BIG!

Try The Foley-Belsaw In Your Own Shop On Our

30-DAY FREE TRIAL OFFER

Mail Coupon Below For Complete Details!

This One Low-Cost Power Tool—

SAWS to desired Width...
PLANES to desired Thickness...
MOLDS all popular Patterns...

—All at once or separately... All By Power Feed!

The Only Complete Workshop Tool Of Its Kind In The World!

From the Day It Arrives... the Planer will make and save you money. With shortages and inflation driving lumber prices sky-high, this versatile power tool quickly pays for itself by easily converting low cost rough lumber into high value finished stock. In just one pass turn out your own quarter-round, door and window stop, casing, tongue-and-groove... all popular patterns. Other operators are making cases for grandfather clocks, furniture, picture frames, bee hives, bed slats, surveying stakes... all kinds of millwork.

Built For Pros... Priced For Home Craftsmen... it is engineered and built to industrial standards, but factory-direct selling keeps the price low. Handles tough oak and walnut as easily as pine, and so simple to operate even beginners with no experience can use it.

Start Your Own Business! Earn Extra Income Right At Home.

With just this one low cost power-feed machine in a corner of your garage or basement, you're set up to supply lumberyards, cabinetmakers, carpenters, remodelers, contractors and hobbyists in your area with custom-planed lumber, trim, molding... ALL of their millwork requirements. You can supply picture molding to art shops, hardware and department stores, or sell direct to framing shops. All standard patterns are available from stock, or we'll custom grind a knife to your own special design or sample.

You Take **NO RISK!** *The Planer/Molder/Saw Is Backed by Our Exclusive 100% Guarantee of Satisfaction:*

• "Try the Foley-Belsaw in your shop for a full 30-Days and put it to work for you. Give it a thorough test and make it prove that it can do everything we say it will... use it just as much as you want. Then if you are not completely satisfied, just send it back and we'll return every penny you sent. And YOU are the sole judge! There are no questions asked... there are no fine print 'use' charges. Our flat guarantee is that YOU must be 100% satisfied or you get your money back."

FREE BOOKLET! Get FREE Book with facts and full details ... RUSH COUPON TODAY!

Just Mail Coupon ... NO OBLIGATION and NO SALESMAN Calls!

ACT NOW! *Coupon Brings Full Details!*

If coupon has been removed, just send postcard with name and address to:

FOLEY-BELSAW CO.
90867 FIELD BLDG.
KANSAS CITY, MO 64111

Does The Foley-Belsaw Pay? YOU BET!

READ WHAT OWNERS SAY:

A Good Investment • Robert Sawyer, Roseburg, Oregon: *"I believe that the Foley-Belsaw is the best investment I ever made. I've been a planer man for years and am now retired. The Foley-Belsaw has earned me $60,000 extra income in the past eleven years."*

Pays For Itself: • R.S. Clark, Springfield, Ohio: *"I bought a batch of walnut in the rough, and after planing it on the Foley-Belsaw I figured up the money I saved. It was enough to pay for two-thirds the cost of the Planer. It really does a good job."*

More Than Expected • Stephen Schultz, Orangeville, Penna.: *"This machine pays for itself by making money out of scrap boards. It is a very well built machine and I confess it is more than I really expected for the price. It does everything you say it will."*

... And Foley-Belsaw Is The Choice Of Professionals:

"I recommend Foley-Belsaw Planer-Molder-Saw as the most useful shop tool any craftsman could own. We use one every day in the Workbench model shop, and couldn't get along without it."

JAY HEDDEN — Editor WORKBENCH Magazine

FOLEY BELSAW

FOLEY-BELSAW CO.
90867 FIELD BLDG.
KANSAS CITY, MO 64111

☐ **YES**, *please send me the FREE Booklet that gives me complete facts about your Planer-Molder-Saw and full details on how I can qualify for a 30-Day Free Trial right in my own shop. I understand there is No Obligation and that No Salesman will call.*

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

ASK WOOD

Print this article

Whether your woodworker's license reads "Beginner," "Intermediate," or "Expert," you're bound to have a few questions about your favorite hobby. We can help. Each issue, we'll consult our experts for answers to your most-asked questions. Send your questions to:

Ask *WOOD*
Better Homes and Gardens®
***WOOD* Magazine**
Locust at 17th
Des Moines, IA 50336

***Note:** Letters selected for use will be edited for publication.*

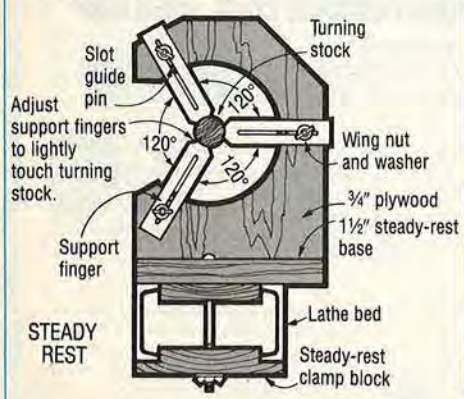
SPINDLE-SNAPPING CURE

Q. *The oak chairs I'm restoring have small-diameter (about 1/4") spindles in the backs that need to be replaced. I've tried turning new ones, but they always break. What am I doing wrong?*

— Bruce R. Chadima, Cedar Rapids, Ia.

A. Here's a checklist to follow when you tackle fine turnings, Bruce:

- Set your lathe speed to about 1,000 rpm.
- Use the shearing (cutting) method of turning.
- Use a light, but firm, touch on the workpiece.
- Don't put excessive pressure on the workpiece with the tailstock.
- Mount a steady rest to the ways of your lathe bed, centered between the headstock and the tailstock. This will reduce the "whipping" effect you get when applying pressure to a long workpiece. You can buy one, or make one like that shown in the drawing below.



HELP TOOLS KEEP COOL

Q. *The cooling slots on my power tools are like sawdust magnets. I've tried unsuccessfully to blow out the dust, and the only solution seems to be disassembling the tools to clean them. Have you got a better idea?*

— T. S. Dickelman, Indianapolis, Ind.

A. Obviously you've found that it takes more wind to clean out your tools than to blow out the candles on your birthday cake. If you don't have an air compressor, stop by your local photography store for a can of compressed air designed to clean camera lenses. The small tube that comes with the can is just the ticket for tight spots.

HOW TO MASTER PATTERNS

Q. *What is the most effective method of transferring carving patterns to wood? I'm having two problems with my carbon paper patterns: missing lines and patterns that wear out quickly.*

— Edwin Barsness, Black Earth, Wis.

A. Instead of tracing carbon paper patterns onto your workpiece, trace them onto cardboard. (Try shirt boards from the laundry or backing boards from writing tablets. Any solid — not corrugated — cardboard should work.) Use a razor knife to cut out your patterns, and you'll end up with templates that you can trace for many projects.

VENEER PROBLEMS ARE ONLY SKIN DEEP

Q. *I have an old sewing machine cabinet covered with veneer that's missing in some sections and pulling up in others. How can I get the old veneer off without hurting the wood underneath?*

— Tim Froelich, Bismarck, N.D.

A. Start off by working an edge loose with a thin-blade putty knife or a drywall-taping knife. Then squirt vinegar under the veneer to help release the old glue (that's if it's hide glue, which sounds likely in the case of an old sewing-machine cabinet). Give the vinegar a few minutes to do its thing. Once you get started, the veneer should pop off in large sections. Take care not to gouge the surface.

By the way, we hope you're not planning to refinish the wood under the veneer. More than likely, it's "filler" wood intended for use only under a layer of veneer. Plan on reveneering the surface, then finishing it.

MATCH YOUR ROUTER TO THE JOB

Q. *Many carbide router bits I'm interested in trying have 1/2" shafts, but the collet on my router will only accept 1/4" shafts. What can I do?*

— Leonard Beller, Plainville, Mass.

A. Sorry, but unless your router is designed for use with interchangeable collets, you'll have to buy a new router. We know of no universal adapter to convert a 1/4" collet to a 1/2" rig. Even if such a device were available, we'd question using it, because your 1/4" router's motor and bearings wouldn't be able to handle the greater loads caused by 1/2" bits.

IS A COMBINATION TOOL FOR YOU?

Q. *I want to buy power tools, and I'm wondering whether to buy a combination power tool or individual power tools.*

— Richard J. Baker, Fairfield, Calif.

A. As with many other decisions, part of the answer depends on your bank account. Concentrate on the best tools you can afford for the jobs you have in mind, but don't pay for capabilities you won't utilize. For example, if you really only need a table saw and a drill press, buy them only. But if you also need a lathe, sander, or a planer, opt for a combination machine.

QUALITY AND AFFORDABILITY

At Foley-Belsaw We Still Use The Words Together!

Since 1926 Foley-Belsaw Sawmills and Wood Planers have meant American Made Quality and Affordability. Our new line of Power Tools continues in this same tradition. Power Tools made with sturdy castings and heavy-duty bearings that you can build a business on but priced for your home workshop.

MODEL 490

TABLE SAW

We invite you to compare the quality of our saw to those costing $1200, $1500 and even more. You'll find the same heavy-duty castings and precise engineering, but with Foley-Belsaw you'll pay hundreds less. The Model 490 10″ Table saw is built to perform like the big boys and gives a depth of cut up to 3½″. Many new design features such as our Accu-Fence System, extra stable hextal stand and Poly-V-Belt drive put the Model 490 one step ahead. There's no reason to search further for the ideal answer to your sawing requirements.

MODEL 435

SCROLL SAW

Like Scroll Saws of old, our frame is solid cast iron as is the big 12″ x 12″ work table. The extra large 20″ throat and 2″ depth of cut easily handle the big jobs... with smooth as silk cuts in all types of woods. Features like a variable speed motor, and a drive mechanism which is submerged in a constant oil bath, provide the smoothest possible power transmission. The Model 435... a professional quality Scroll Saw built for a lifetime of service.... yet priced for the home workshop.

MODEL 480

BANDSAW

For the woodworker who demands professional results! Features like a solid cast iron table, solid cast trunions, heavily ribbed frame castings, provide plenty of strength for a lifetime of vibrationless precision. Check the many features of the Model 480 14″ Bandsaw and you'll discover... no other Bandsaw in its class can compare.

GUARANTEED FOR LIFE

Guaranteed to last a lifetime.... because it's built to last a lifetime. The entire new line of Foley-Belsaw Power Tools carries a limited lifetime warranty. Receive full details when you send for your free Booklet on Power Tools For Profit... just clip the coupon and mail today.

PLUS 30-DAY TRIAL

All Power Tools are available on a 30-Day "No Risk" Trial. Foley-Belsaw's Hands On Trial is your assurance that our products will faultlessly perform every function we claim to your satisfaction. Take 30 Full Days and use our equipment as much as you wish... put it through its paces.

FINANCING AVAILABLE

All Foley-Belsaw equipment is available on our Easy Payment Plan, tailored to fit any budget. Our ironclad warranties combined with the confidence to finance our own equipment at low interest rates assures you of Quality and Affordability.

1926 60TH YEAR 1986 FOLEY BELSAW

When you buy Foley-Belsaw you buy "Direct From the Factory". You buy American made precision and quality, guaranteed for life, at home workshop prices. You also get a Full 30-days to prove that our products perform... and perform they will or we simply return your money, no questions asked. So if you'd like to get the most for your money, take a good look at the Foley-Belsaw line of Power Tools and use our "Tailored to Fit any Budget" Easy Payment Plan... just clip the coupon below and Mail Today!

FOLEY BELSAW

Foley-Belsaw Co.
42005 Field Bldg.
Kansas City, Mo. 64111

☐ **YES,** please send me information on your complete line of Power Tools and full details on how I can qualify for a 30-Day Trial right in my own shop. I understand there is no obligation.

NAME_____

ADDRESS_____

CITY_____

STATE_____ ZIP_____

FOLEY BELSAW "Power Tools For Profit"

SEND FOR FREE BOOKLET

ONLY $9.95 EACH...

FREE! Stainless Steel Pocket Knife when you order 3 or more items

Set of 3

Flush Mounting

BENCH STOPS

Easy to install, easy to use. Just raise the jaw and press your workpiece against the teeth. Especially useful when positioned opposite a shoulder vise with built-in "dog". **#300-0004**

Our Indispensable

HONING GUIDE

Maintains the proper angle for accurately honing any chisel or plane blade up to 3" wide. Complete instructions included. **#103-0140**

Chamfering JOINTER PLANE

Built-in angles on either side of the 3/4" sole will put a 30° or 60° angle on any edge, accurately joint 3/4" boards. Uses readily available, replaceable breakaway blades (10 extras included). **#109-0410**

LIMITED QUANTITY

25 Reciprocating

SAW BLADES

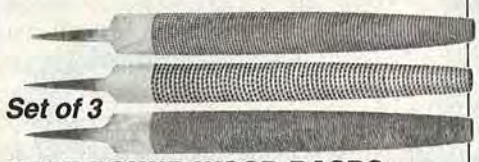
25 assorted blades with 1/2" shanks, for cutting wood, plastics, metal. Made by Stanley to fit all recipro saw makes except WEN. Save 50% to 80% off regular retail.

LESS THAN 40¢ A BLADE! **#117-1960**

Self-Centering

HINGE & BUTT DRILLS

For perfectly centered holes for hinges. 1/4" shanks. Set of 2, for #6, #8, #9 and #10 screws. **#200-2601**



Set of 3

HALF ROUND WOOD RASPS

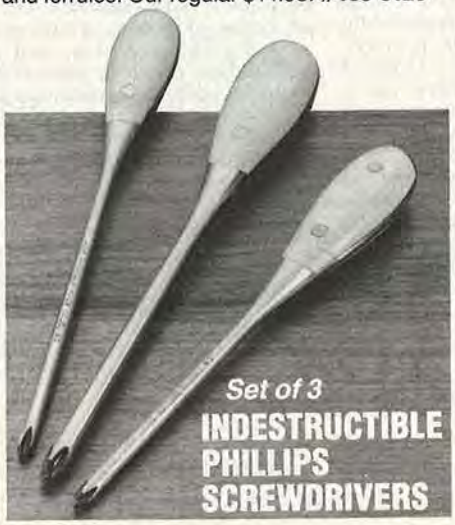
1 each Smooth, Medium and Coarse cut. An extraordinary value from China. **#106-0124**

CUT 1/3!

10" Blade

DRAWKNIFE

Has a heavy straight blade for continuous use. Comfortable maple handles with steel caps and ferrules. Our regular $14.95. **#109-0120**



Set of 3

INDESTRUCTIBLE PHILLIPS SCREWDRIVERS

Companions to the 4 piece set. 6", 8" and 10" overall. #1, #2, #3 Phillips. **#102-0045**

45 Assorted

1/4" SHANK SABRE SAW BLADES

For cutting wood, metal, plastic. 60 assorted first quality blades, made in Switzerland and the U.S. Fit all popular sabre and jig saws. **#117-1999**

LIMITED QUANTITY

SAVE $3.00!

Magnet

BRAD DRIVING PLIERS

Set brads into picture frames and moldings up to 3⅝" wide, 1¾" deep. Cushioned slide prevents marring. **#106-0010**

PAIR FORGED PLIERS

British made: Comfort Grips 6" heavy duty Diagonal Cutter 8" Lineman's **#117-2056**

Set of 2

SCREW HOLDING SCREWDRIVERS

Reach where your hand can't. 7¾" aluminum shaft has a magnet on one end, a spring loaded screw holder on the other. For all Phillips and slotted screws. **#300-0015**

Set of 4

INDESTRUCTIBLE SCREWDRIVERS

The blade and handle are a single forging, with a smooth, oval shaped hardwood grip riveted to each side of the handle for comfort. So tough you can hammer them like cold chisels. Set of 4: 6", 8", 10" and 12" long overall. **#102-0049**

SAVE UP TO 50%! MINIMUM ORDER: TWO ITEMS

22 Piece
PILOT DRILL SET

21 bits, to countersink, counterbore screws sizes 4 to 14. A depth stop is included so you can prevent countersinking if preferred on all but the smallest bits. Less than 70¢ a bit! You get bits for:

#4 & #5 screws	1/2", 5/8", 3/4", 1" long
#6 & #7 screws	5/8", 3/4", 1", 1¼" long
#8 & #9 screws	3/4", 1", 1¼", 1½", 2" long
#10 screws	1", 1¼", 1½", 2" long
#12 & #14 screws	1", 1¼", 1½", 2" long

#200-0125

RATCHET TAP WRENCH

All inner mechanisms, ratchet and chuck are correctly heat treated and tempered. Chrome plated. Two jaw. Capacity ⅛"-⅜". **#300-0025**

6-Piece **FILE SET**

Made to sell for far more. 10" Double Ended Saw File, 8" Cross Cut File (wedge shape, round back), 8" Mill Bastard File with 2 round edges, 7" X-Slim Taper, 8" x 3/16" Fine Cut Parallel Round File and a 4-in-1 10" Shoe Rasp (combination file and rasp). **#117-1160**

***FREE!** 7 Stop Collars*
14-PIECE DRILL & COLLAR SET

You get 7 drills, 7 stop collars for the price of the drills alone. Brad point bits for straight, accurate holes in wood with no skipping, no skating, no dancing. 1/8", 3/16", 1/4", 5/16", 3/8", 7/16" and 1/2" sizes. **#200-0060**

Pair Black and Decker **6" WIRE WHEELS**

Double thick; ½" bores; Coarse and fine. Industrial quality. **#117-0799**

CAT'S PAW NAIL PULLERS

Two thin, sharp claws on the end will withdraw small finishing nails. The rounded base minimizes marring. Exceptional value. **#105-0579**

Lightweight, Unbreakable
4" LOCKJAW VISE

Made of a virtually unbreakable space age alloy, with a patented, rear tilt jaw for holding irregularly shaped work. Specially configured 4" magnesium jaws. 3" jaw opening.
#300-0745
LIMITED QUANTITY

First quality, stainless steel instruments. For modeling, probing, sculpturing and other delicate work. **#106-0007**

MINIMUM ORDER: TWO ITEMS

SATISFACTION GUARANTEED!

the Fine Tool Shops

The Fine Tool Shops, Inc., Dept. **WM96**
20 Backus Avenue, P.O. Box 1262, Danbury, CT 06813

Ship to _____

Address _____

City _____ State _____ Zip _____

☐ I've ordered three or more items. Include my FREE Stainless Steel Pocket Knife.

CALL TOLL FREE
1-800-243-1037
In Connecticut
797-0772

Fill in names, quantities and product numbers of items you are ordering.

Qty.	Item	Prod. #	Price ea.	Total
1	**Stainless Steel Pocket Knife**		**FREE! when you order 3 items or more**	

☐ Send your Full Color Tool Catalog – **FREE!**

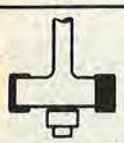
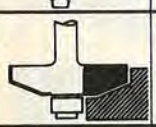
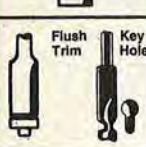
☐ Check Enclosed
☐ Charge my ☐ Amer Express ☐ VISA ☐ MasterCard

Account # _____

Exp. Date _____

Subtotal	
Shipping/Handling	**$ 3.50**
CT 7½% Sales Tax	
TOTAL ENCLOSED	

CARBIDE TIPPED ROUTER BITS
PROFESSIONAL PRODUCTION QUALITY
SPECIAL OFFER — SAVE 50% - 75% BELOW COST
1000's SOLD TO READERS OF FINE WOODWORKING

BEST CUT BEST PRICE	ITEM NO.	DESCRIPTION	RADIUS	LARGE DIAM.	CUTTING LENGTH	PRICE
		COVE				
	#01	1/4"R	1/4"	1"	1/2"	$13.00
	#02	3/8" R	3/8"	1¼"	9/16"	14.00
	#03	1/2" R	1/2"	1½"	5/8"	15.00
		ROUND OVER				
	#04	1/4" R	1/4"	1"	1/2"	15.00
	#05	3/8" R	3/8"	1¼"	5/8"	16.00
	#06	1/2" R	1/2"	1½"	3/4"	19.00
		ROMAN OGEE				
	#07	5/32" R	5/32"	1¼"	15/32"	18.00
	#08	1/4" R	1/4"	1½"	3/4"	20.00
	#11	3/8" RABBETING	Deep 3/8"	1¼"	1/2"	14.00
	#09	1/8" (KERF) SLOT CUTTER		1¼"	1/8"	14.00
	#10	1/4" (KERF) SLOT CUTTER		1¼"	1/4"	14.00
	#12	45° CHAMFER	45° Angle	1½"	5/8"	15.00
	#15	RAISED PANEL	20° Angle	1-5/8"	1/2"	25.00
	#35	1/4" V Groove 90°		1/4"	1/4"	8.00
	#36	3/8" V Groove 90°		3/8"	3/8"	9.00
	#37	1/2" V Groove 90°		1/2"	1/2"	11.00
	#16	3/8" Dovetail 9°		3/8"	3/8"	7.50
	#17	1/2" Dovetail 14°		1/2"	1/2"	8.50
	#18	3/4" Dovetail 14°		3/4"	7/8"	10.50
		CORE BOX (ROUND NOSE)				
	#19	3/8" Core Box	3/16"	3/8"	3/8"	11.00
	#20	1/2" Core Box	1/4"	1/2"	11/32"	14.00
	#21	3/4" Core Box	3/8"	3/4"	5/8"	18.00
		GROOVE FORMING OGEE				
	#22	1/2" Grooving Ogee		1/2"	3/8"	16.50
	#23	3/4" Grooving Ogee		3/4"	7/16"	21.00
	#24	1/4" Straight Bit		1/4"	3/4"	7.00
	#25	5/16" Straight Bit		5/16"	1"	7.00
	#26	3/8" Straight Bit		3/8"	1"	7.00
	#27	1/2" Straight Bit		1/2"	1"	7.00
	#28	3/4" Straight Bit		3/4"	1"	10.50
 Flush Trim Key Hole	#13	1/2" FLUSH TRIM		1/2"	1"	8.50
	#14	3/8" KEY HOLE (This Bit only HSS)	CUTS 3/8" KEY HOLE FOR FLUSH MOUNTING PICTURE FRAMES, ETC.			8.50

WHEN ORDERING ANY 3 OR MORE, DEDUCT $1.00 EACH
ALL PRICES POSTAGE PAID

- **Professional Production Quality**
- **1/2" Ball Bearing Pilot**
- **1/4" Diameter Shanks x 1¼" Long**
- **One Piece Construction**
- **Two Flute Thick High Quality Tungsten Carbide Tips**

To order by Master Charge or Visa Toll Free
7 Day — 24 Hour Order Service Call
1-800-523-2445 Ext. 56 (In PA 1-800-346-7511 Ext. 56)
or send check to:

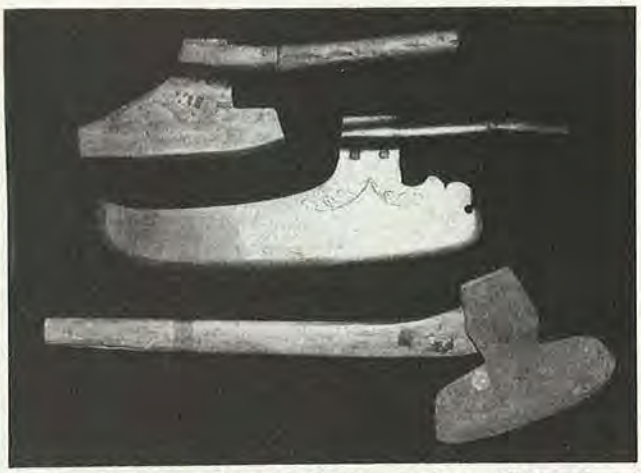
MLCS, P.O. Box 53D, Rydal, PA 19046

YESTERDAY'S TOOLS

Beginning in this issue, WOOD brings you a look at some notable tools from the past. Each has a story to tell — where it originated, how it was made, what it was used for, and, if you're interested in collecting, notes on value.

THE HEWING AX

Frontier lumber maker



Top. **Standard goosewing ax with elongated eye, slight poll, and sound old handle; thought to be German, *c.* 1800.** ***Middle.*** **Exceptional Austrian goosewing with 20½" bit and decoration, *c.* 1700.** ***Bottom.*** **Typical American "broad ax" with bent handle, *c.* 1840.**

Before the days of sawmills, table saws, and planers, you chopped away with a hewing ax if you wanted flat sides on round wood. In the hands of the skilled craftsman, this nearly indispensable tool hewed beams for homes and barns, and even fashioned rustic furniture. Some hewing axes nearly became works of art. Others remained quite plain, particularly those made on the American frontier.

What makes a hewing ax different?

The sharpened cutting edge of an ax is called a bit. Unlike a felling ax, which has a bit sharpened from both sides of its head to form a fine edge (like a knife), the bit of a hewing ax is sharpened from one side only. Therefore, a hewing ax works as a chisel does: The flat side slides against the wood while the sharpened edge of the other side slices.

Hewing axes also have longer bits than felling axes, and they're slightly curved along their length. American versions range from 9" to about 14" in length, and European ones often exceed 16", their shape suggesting a goose's wing.

But don't rely soley on the shape and bit length of a hewing ax to tell you where it came from. All axes made before the early 1800s were handcrafted by blacksmiths who followed individual as well as regional preferences as to shape.

Continued on page 24

Compare this offer with any other book club for Price • Quality • Benefits • Selection!

An absolutely no-risk guarantee.

1315 $21.95

1638 $26.95

1354 $15.95

1868P $12.95

Select 5 Books for only $2.95

(values to $138.70)

and get 2 Free Gifts!

1809 $22.95

2632 $21.95

1928 $18.95

1361 $18.95

1648P $11.95

1297 $17.95

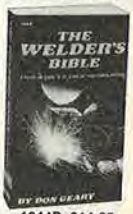
1982 $19.95

1655 $21.95

1122 $18.95

1381P $14.95

1784 $17.95



1244P $14.95

1238P $8.95

2667 $19.95

Membership Benefits • **Big Savings.** Save up to 75% on books sure to increase your how-to know-how. • **Ironclad No-Risk Guarantee.** If you don't like your books, return them within 10 days without obligation! • **Club News Bulletins.** All about current selections—mains, alternates, extras—plus bonus offers and special sales. Comes 13 times a year with hundreds of titles to choose from. • **Automatic Order.** Do nothing, and the Main Selection will be shipped automatically! But if you want an Alternate Selection—or no books at all—we'll follow the instructions you give on the reply form provided with every News Bulletin. • **Bonus Books.** Immediately get Dividend Certificates with every book purchased and qualify for big discounts of 60% to 80%. • **Exceptional Quality.** All books are quality publisher's editions especially selected by our Editorial Board.

1403P $8.95

2677 $19.95

1312P $9.25

1528 $18.95

FREE When you join!

Glue It - *an indispensable, do-it-yourself guide* ***(a $14.95 value)*** *and a multi-purpose* **Shop Apron!**

1245P $16.95

1554P $12.95

2614 $15.95

1959 $18.95

1458P 12.95

1744 $23.95

1909 $21.95

2602 $27.95

1510P $12.50

1844P $14.95

HOW-TO BOOK CLUB

P.O. Box 8, Blue Ridge Summit, PA 17214

Please accept my membership in the How-To Book Club and send the 5 volumes circled below, *plus* my FREE copy of *Glue It* (1801) and shop apron, billing me $2.95 plus shipping and handling charges. If not satisfied, I may return the books within ten days without obligation and have my membership canceled. I agree to purchase 4 or more books at regular Club Prices (plus shipping/handling) during the next 12 months, and may resign any time thereafter.

1122 1238P 1244P 1245P 1297 1312P 1315
1354 1361 1381P 1403P 1458P 1510P 1528 1554P
1638 1648P 1655 1744 1784 1809 1844P 1868P 1909
1928 1959 1982 2602 2614 2632 2667 2677

Name _____

Address _____

City _____

State _____ Zip _____ Phone _____

Valid for new members only. Foreign applicants will receive special ordering instructions. Canada *must* remit in U.S. currency. This order subject to acceptance by the How-To Book Club.

BHGW-986

© 1986 HOW-TO BOOK CLUB
Blue Ridge Summit, PA 17214

(Publisher's Prices shown)

NEW POWER FEED

DRUM SANDER

At last! A complete power-feed Drum Sander at an affordable price! Comes ready to use including hood, stand and motor! Choose from 12" and 26" models.

FINISH SANDING...THICKNESS SANDING

Use this high-tolerance machine for light dimensioning as well as the finest finish work. Now you can add new beauty to each woodworking project...save hours of tedious hand sanding! In a matter of seconds, you can produce a satin-smooth finish impossible to duplicate with hand methods or hand-held power sanders...no more low spots, waves or cross-grain marks!

IMPROVES RESULTS!

Send for complete facts! See how the Sander can dimension and finish-sand cabinet pieces, resawn stock paneling, grandfather clocks, toys, tabletops, knees, burls, crotches, and much, much more! You'll soon find it's one of the most valuable tools in your shop! **Made in U.S.A. Easy terms.**

Call Toll-Free 1(800) 251-4888, ext. 2414

SANDER FACTS

☐ **YES!** Please rush my **FREE INFORMATION KIT** and details on your 30-Day Free Trial Guarantee.
Woodmaster Tools, Dept. RW14
2908 Oak, Kansas City, MO 64108

NAME _____

ADDRESS _____

CITY _____

STATE _____ **ZIP** _____

Free 30 Day Trial!

Send for complete facts on how you can try the Woodmaster Power-Feed Drum Sander in your own shop for 30 days completely without risk!

NEW from Penn State Industries . . . a supplier of quality products for over 40 years

Precision Super 15" Scroll Saw

Comparable value over $500

Only $139.95 shipped complete ready to run

This versatile machine makes cutting intricate wood patterns easy. A smooth cutting action virtually eliminates sanding. The blade is driven on both up and down stroke, and a parallel rocker arm system and pivoting blade clamp absorbs stress to avoid blade breakage. The blade moves slightly back from the wood on the up stroke and forward into work on the down stroke to speed cutting. Great for making toys, jewelry, puzzles, fretwork, etc. Thousands of these machines used in Europe for many years.

SPECIFICATIONS:

- 100% Cast iron construction
- Throat depth — 15"
- Max depth of cut — 2"
- Cuts per minute — 1725
- Weight — 43 lbs
- Use standard 5" blades
- Stroke length — 3/4"
- Table tilt — 0 - 45°
- Table size — 8" x 17"
- Motor — Heavy duty totally enclosed fan cooled 110V - 120V 2.5 amp UL listed, ball bearing — induction motor

FREE 12 blades and extra blade holder with purchase

To Order, Call or Write:

PENN STATE INDUSTRIES-W
2850 Comly Road • Philadelphia, PA 19154
1-215-676-7609 (Ext. 15)
Visa, Master Card, Check or Money Order Accepted
Add $10.00 for shipping • Pennsylvania residents add 6% sales tax

YESTERDAY'S TOOLS

Continued from page 22

How you can tell an ax's approximate age

Accurate dating of any old tool adds collectible interest and value, but hewing axes can pose special problems. The many makers, the variety of shapes, and the tendency for a favorite shape to be repeated without change for hundreds of years (no matter where the shape originated), make it hard to date an ax.

Knowing collectors use these guidelines for general dating:

- Axes from the 17th century and earlier don't have a *poll,* which is the flat, thick area of the head opposite the bit end.
- A round or elongated *eye* in the ax head, which accepts the handle, means the tool belongs to the 18th century. Axes made after that were beefed up with long, narrow eyes similar to today's axes.
- An all-wrought-iron ax head indicates it was made before 1800. Find one with a stronger, steel bit forged to softer metal and it was probably made after 1800. Note, though, that it was common practice during the 19th century to forge harder steel bits on old axes.

What it might be worth

General condition, as well as age, determine the value of a hewing ax. A very old ax that can still be used is worth more than a newer, more fragile one. Generally, hewing axes fall in these value ranges: American hewing axes with bits 10-13", $30 to $95; with bits 14" or longer, $75 to $200; European goosewing axes, $100 to $1,800.

You can count on higher value if a hewing ax has one or all of the following: an original, or at least old, handle with signs of wear and patina of age; a long bit; a handstruck, legible maker's mark (on the right side of the ax head); and incised decoration.

Photograph: Jim Elder

Written with Vernon U. Ward, tool collector and dealer, editor and publisher of *The Fine Tool Journal.*

ELEKTRA BECKUM

THE PERFECT COMBINATION

HC260 JOINTER/PLANER 'and'
SPA1000 DUST EXTRACTOR

- Hardened 40" tables
- Width of jointer and planer 10¼"
- Max. thicknessing depth 6½"
- 63 cuts per inch
- A clean work environment
- 765 cfm suction capacity
- 4" x 98" heavy duty hose
- Use any standard trash bag
- 3/4 HP motor 110/1/60

2.4 HP, 220V $1250.00
2.4 HP, 110V $1295.00
4.2 HP, 220V $1375.00

$450.00
Suggested list price
FOB Somerdale,NJ

ELEKTRA BECKUM

Send $1.00 for full color catalog to:
ELEKTRA BECKUM USA DEPT HCS
PO BOX 24, SOMERDALE, NJ 08083
Call for your local dealer: 1-800-223-8600
See these machines demonstrated at:
Atlanta, Sept. 6-9 ; Detroit , Sept. 26-28 ;
New York Sept. 26-28 ; Chicago Oct. 17-19.

PORTER+CABLE
PROFESSIONAL POWER TOOLS
for the best quality at the best prices

Mortise & Tenon Jig
With your bench vise and router, you can create single or multiple mortise & tenon joints at any angle, with exact fit, in just 2 to 4 minutes each! (model 5009)
LIST $49.95 **SALE $39.00**

Limited Edition "American Classic" Router NEW!
This solid die-cast aluminum housed ⅞HP anniversary issue router honors the tradition of excellence found in all Porter-Cable tools.
SALE $135.00

Order No.	Description	LIST	SALE	Order No.	Description	LIST	SALE
7548	Top-Handle jig saw	199	136	690	1½ hp router	194	132
7648	Barrel-Grip jigsaw	199	139	691	1½ hp D-handle router	218	153
315-1	13 amp saw	166	108	520	3 hp router	460	314
360	3x24 belt sander dustless	280	196	7548	Top-Handle jig saw	199	136
361	3x24 belt sander	260	182	7648	Barrel-Grip jigsaw	199	139
362	4x24 belt sander dustless	295	201	9118	Porta-Plane kit	299	204
363	4x24 belt sander	280	196	319	Laminate trimmer	215	145
330	Finish sander	87	54	309	Laminate trimmer	130	91
505	Finish sander	175	113	310	Laminate trimmer	190	133
630	1 hp router	150	105	312	Laminate trimmer	205	143
				7514	½" drill	169	115
				7511	⅜" pistol drill	164	112

VISA ☎ Call TOLL-FREE **1-800-638-6405** MasterCard

W.S. JENKS & Son
1933 Montana Ave. NE Washington DC 20002

PRODUCTS THAT PERFORM

Print this article

Cutting clean, the Japanese way

This Japanese saw has an extremely thin (and flexible) blade — just the ticket for flush-cutting fastening pegs and other parts. Since the teeth have no set, this saw won't damage the surface surrounding the joint. (Remember, Japanese saws cut only on the pull stroke.) This tool makes a good choice for cutting joints, too. *Flush-Cutting Saw (catalog no. 49107.02), $67. We ordered ours from Garrett Wade Company, Inc., 161 Avenue of the Americas, Dept. W, New York, NY 10013.*

Here's how to get to the finish line — fast

If you're like us, there are lots of times when you just can't wait to see a project completed. This spray-on, clear wood finish helps you do just that because it dries dust-free in only 30 minutes. As a bonus, the lacquer finish is water- and alcohol-resistant and won't darken with age. *Deft Semi-Gloss Clear Wood Finish, $4.99 in paint outlets, hardware stores, and home centers across the country.*

The tie that binds and binds

It's tough to judge the right tension to use with regular clamps or straps when you're gluing joints, repairing furniture, or trying to assemble odd-shaped pieces. The solution: This 20-foot plastic tape lets you feel how much pressure you're applying as you wrap and stretch it around the workpiece. Most glues won't stick to the elastic tape, and it contracts back to original size when you're through. *Snug, $3.98 from the Carrollton Corp., 70 Carrollton Ave., Dept. W, Elmira, NY 14905.*

Continued

A special kind of cutoff saw from Delta

It's not exactly a miter saw, nor is it a radial arm. The Delta Sawbuck has features you won't find in any other machine. Plus, it's stout enough to take the abuse of framing and siding jobs while it remains accurate enough for detailed trimming and cabinet work.

If you already own a table saw for ripping and grooving, and have considered a radial arm, give the Sawbuck a try first. It handles simple or compound miters, left or right, of up to 45° through full 12" boards (no radial-arm saw, including 12" models, can match that).

The Sawbuck also incorporates a large work table and a powerful 15-amp motor in its design. The whole unit folds up on its own built-in wheels for convenient storage or transport.

It's important that you remember, though, that this saw, like its cousin the power miter saw, is a cutoff saw only. You cannot raise the motor carriage in order to cut dadoes. And you must slide all material into the saw from the ends. Also, the two end supports for the motor carriage tracks can be somewhat unwieldy at times. *Delta Sawbuck, $707 suggested retail, Delta International Machinery Corp., 246 Alpha Dr., Pittsburgh, PA 15238.*

Polished performers

Get top-notch results from these two products. The polish cleans and preserves without adding an artificial sheen. The lemon oil won't attract dust. *Parker's Perfect Polish and Lemon Oil, $5.50 each (in 16-oz. bottles), C.W. Parker Co., 1415 Second Ave., Des Moines, IA 50314.*

For the Serious Woodworker . . .
No more changing blades for rip, miter and crosscut—or for different kinds of material!

WOODWORKER I

WOODWORKER II

NEW LOW PRICES

Why Buy 3 Blades When This ONE DOES IT ALL?

RIP-COMBINATION-FINE CROSSCUT

Made in America & maintained here in America for your benefit.
Keep like-new performance, use our superior micro-edge factory sharpening!

WOODWORKER I (For the Radial saw) This is my *original* Woodworker blade—most desired by the American craftsman. Kerf 3/32", 60 teeth. Modified triple-chip with micro-finish grind. Carbide C4 hard and 40% stronger. **Perfect, polished cuts in every direction.** The one blade that does it all—for as long as you'll cut wood or plastics. Designed for use primarily on your radial saw, thin kerf gives better control and less bottom splinter. Availabe in 8", 9" and 10" diameters. Recommeded to use with dampener. See below.

WOODWORKER II (For the Table Saw) My new **ALL PURPOSE** blade—*primarily* for your table-saw 1/8" kerf, 30 to 40 teeth (see below). Modified alternate-bevel with micro-finish grind. Exclusive Forrest 400 carbide. Designed for super-fast and super-smooth CROSSCUTTING and RIPPING in heavy, solid stock with a **smooth-as- sanded surface. We rip 2" Red Oak with 1 HP at the shows leaving surface smoother than a jointer,** then crosscut and speed-miter soft and hardwoods and PLY-VENEERS with NO BOTTOM SPLINTERING. Generally I recommend 40 teeth. However, if your ripping includes a lot of heavy 1½" to 2" hardwoods, specify 30 teeth. See dampener information. STOP CHANGING BLADES! (wastes 3-5 minutes). Just raise for thick woods, lower for thin woods and perfect cut everything.

AVOID cheap imports! WOODWORKER I and II eliminate scratchy saw cuts for the rest of your life!

Multitooth Dado Sets cuts 1/4"— 3/16" flat bottom grooves WITH GRAIN OR ACROSS in all woods and VENEER PLYS. No splintering due to unique 4T and 8T fillers and 24T outside saws.

Testimonial ***"I finally bought one and found all your outrageous claims to be true!"***

Jim Forrest, President and designer, mircoscoping cutting edge.

SPECIAL LOW PRICE SALE

	WAS	NOW 50% OFF
10" 60T	$162	$81
9" 60T	156	79
8" 60T	150	75
WOODWORKER II		Table Saw
10" 40T	$156	$ 78
30T	135	68
9" 40T	146	73
30T	125	63
8" 40T	136	68
30T	115	58
7¼" 30T	112	49
7" 30T	112	49

SHIPPING $3.50

8" Dado 24T $299 13/16" set **Now $209**
Inquire for Larger Industrial Sizes

DAMPENER-STIFFENER One Side Aids A Smoother, Quieter Cut!! • Holds blade **rigid and true** for better cuts on your machine. • Dampens out **motor and belt** vibrations from being transmitted up to the rim of the teeth causing scratchy cuts. • Greatly reduces **cutting noise.** • Helps kill saw **scream-whistle** from any vibrating blade surface. • Is hardened and precision ground parallel and **flat within .001"** to keep your blade true. • Can be removed instantly if need requires for deep cuts. • One against the outside leaves blade **centered** in slot of **steel** table insert. • 6" dampener on 10" blade gives 2" cutdepth. Use 5" dampener if always in 1½-2" deep cuts. Remove or use 4" for 3" cuts. For 8" and 9" blades, figure dampener size accordingly.

6" Dampener $23 • 5" Dampener $22 • 4" Dampener $20 **ADD $2 SHIP**

WE RECOMMEND OUR FACTORY SHARPENING...2-3 DAYS ON THESE AND ALL MAKES OF CARBIDE TIP SAWS, SHIP IN UPS OR P.P. 10X40T $14.25, 60T $16.83 **NOW...**ORDER the one blade that will outlast you! (10-20 sharpenings possible). Add return UPS $3 or 2nd Day Air $5.

Dealer Inquiries Welcome.

Your cutting satisfaction guaranteed or full cash or credit refund.
40 years of fine American saw making & sharpening.
FORREST MANUFACTURING COMPANY, INC.
250 Delawanna Ave., Clifton, NJ 07014

FORREST

We honor Amex, Visa & MasterCard.
Money Orders, Personal Checks and COD's.
To order **BY MAIL** clip ad, circle choices and enclose payment. Specify Dept. W when ordering.
PHONE TOLL FREE!
1-800-526-7852 (In NJ: 201-473-5236)

BLACK & DECKER™ 2 for 1 SALE!

Jointer/Planer

3590 DEWALT

10" COMBINATION PLANER/ THICKNESSER

- 2-HP, 220 volt motor.
- All ball bearing construction for smoother running, longer life.
- Completely adjustable machine offers a jointer and planer combination.
- Provides hefty 3/16" depth of cut.
- 13,600 cuts per minute.
- Maximum thickness of material: 4-1/4".

ACME PRICE $729

Full Line Distributers • Factory Authorized Service • Same Day Shipping

•10" •2 HP •Rotary table

FREE 10" Carbide Blade

Model 1703 $158

•9," 9 amp •Ball & sleeve bearings •Gear drive

Model 7715 $128 Includes $10 Rebate

•8¼," 8 amp •Gear drive •Rotating table

Model 9425 $108

UNLIMITED TIME OFFER

OVER 10,000 TOOLS IN STOCK!

48 STATE PREPAID FREIGHT

acme Electric

TOOL CRIB OF THE NORTH SINCE 1948

CALL TOLL FREE FOR MIKE

1-800-358-3096

10" HEAVY DUTY TABLE SAWS!

SUPER SPECIAL

One of our best selling machines, this high quality tablesaw has precision ground Cast-iron wings and table top. Other features:

- ★ Table size is 41" x 27" with wings attached
- ★ Motor is a strong 1½ H.P. single phase
- ★ Table has T-Slots for miter gauge
- ★ Rip fence has fine adjustment and locks front & back with one lever
- ★ Miter gauge, dado insert & regular insert are standard
- ★ Weighs a solid 235 lbs.

Regularly priced at $325.00

Model G1022 - SUPER SPECIAL PRICE

Only $295.00 FOB BELLINGHAM

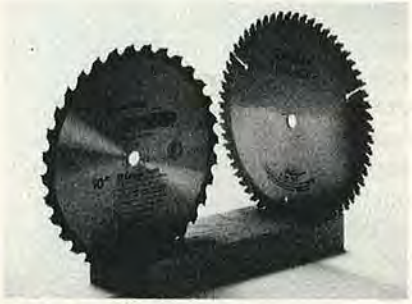
Call for low discounted freight rates

VISA

GRIZZLY IMPORTS INC.
P.O. BOX 2069, BELLINGHAM, WA 98227
PHONE (206) 647-0801

MasterCard

PRODUCTS THAT PERFORM



Two blades on the cutting edge

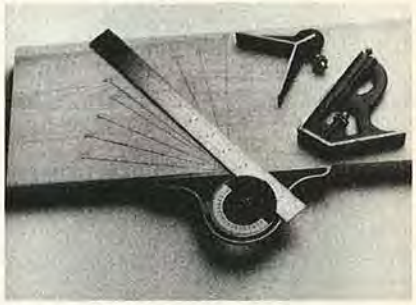
Both of these blades — one primarily for table saws and the other targeted for radial-arm use — prove that you *can* teach an old blade new tricks.

- The Piranha blade, shown at left in photo, ripped wood with ease on our table saw. (We tried the blade on oak and rosewood and couldn't get the saw to bog down at all.) The secret is in the computer-aided design, curved carbide teeth, and an advanced grinding process. Besides wood, this blade can handle plywood, particleboard, hardboard, wallboard, and a variety of plastics. The blade comes in seven popular sizes, ranging from 16 to 40 carbide teeth.

Black & Decker Piranha Blades, from $8-$20. Available at hardware stores and home centers.

- We found that the "Radi-All" blade, at right in photo, crosscut admirably when we tried it on our radial-arm saw. The special hook design and precision tooth grind combine for comfortable feed flow and minimal overfeeding (the saw wanting to feed faster than the blade can cut). This 10"-diameter blade has 60 carbide-tipped teeth and a ⅝" bore.

DML, Inc. Radi-All Saw Blade, $92. Available in saw shops and industrial/contractor supply outlets nationwide.



The right combination

You'd normally find a combination square of this quality in a machinist's shop, but we think it also belongs in a woodworker's shop. The precision rig's protractor head is calibrated from 0-180°, while the square head has 45° and 90° angles. The 12" steel rule is marked to 1/64" increments.

Combination Square (catalog no. 9-12-4R), $72 from your local hardware dealer, or write: the L.S. Starrett Company, 121 Crescent St., Dept. W, Athol, MA 01331.

Continued

BEAVER BLADE™

Patent Pending

The Revolutionary Circular Saw Blade

Power Saws FOR gas powered Brushcutters

CUTS any wood or paneling, plastic pipe & plexi glass

CUTS thick grass, high weeds, heavy brush & small trees,

and cuts smoother, faster, longer.

ALL WITH JUST ONE BLADE!

All users have loved the Beaver Blade™. You will too — or your money back*. ORDER NOW!

7" Beaver Blade™
Sug. retail price $24.95
SALE PRICE $19.95

9" Beaver Blade™
Sug. retail price $30.95
SALE PRICE $24.95

Mail to: AMERICORP Ventures
5500 North Western
Suite 106
Oklahoma City, OK 73118

Please send me:
____ 7" Beaver Blade(s)™ at $19.95 ea.
____ 9" Beaver Blade(s)™ at $24.95 ea.

Add $3 ea. for shipping & handling. Okla. residents add 6¼% sales tax. Allow 4-6 weeks delivery. Sorry — No C.O.D.'s.
____ My check or money order is enclosed.
____ Bill my credit card: ☐ Visa ☐ Mastercard
Card # _____ Exp. _____
Signature _____

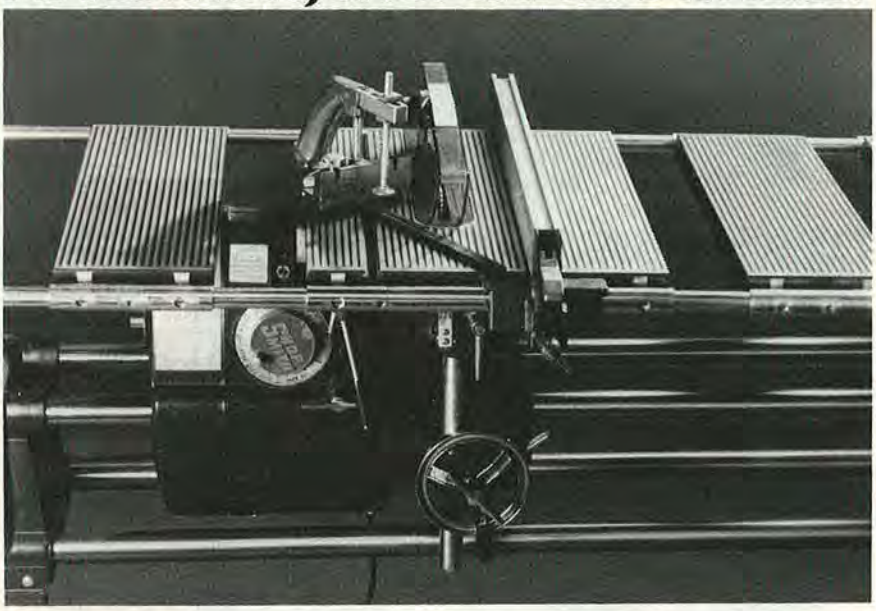
* 30 day money back guarantee if not fully satisfied.
PLEASE PRINT CLEARLY BH/W1086
Name _____
Address _____
City _____
State _____ Zip _____
Phone (____) _____

© 1986 Saw-Tech Industries, Inc.

PRODUCTS THAT PERFORM

Continued

ATTENTION, SHOPSMITH OWNERS!



If you're on the Shopsmith mailing list, chances are good that you've received literature about the Mark V Retro-fit Kit.

Are you going to like the new system? You bet! Right away you'll notice that the new 17½ x 22" table dwarfs the existing one — it's a third larger. This is a long-awaited improvement for crosscutting wide pieces and ripping random widths of material. Shopsmith also enlarged the fixed extension tabletop. And the double-lock rip fence is another significant improvement; when teamed with the double-trunnion table locks, the package offers greater sawing accuracy. To keep safety at the forefront and fingers attached to the hand, the table insert is painted red.

There's more. The miter gauge has a new "T" bar and a slick quick-clamp assembly. The retrofit upper saw guard moves with the quill, and the new lower saw guard is adjustable (use it as a dust chute with the sanding disk).

For an extra $100, you can buy two additional floating tables, four extension tubes, and two telescoping legs that take the drudgery out of supporting 4x8 panels — the instruction sheet suggests no fewer than eight arrangements of this package. The nifty system of tubes locks onto the work table through the rip fence rails. Rolling the Shopsmith with the telescoping legs in place is a slight hindrance, but the legs aren't an accessory you use every day. And they are oh-so handy when needed.

Optional accessories add more flexibility

Shopsmith redesigned several accessories as options for the retrofit. A new saw arbor, sanding-disk hub, and two-position lathe-tool rest arm are included in the retrofit kit. Not included in the kit: five special-purpose table inserts, a shaper/drum sander fence, and a mortise hold-down.

The retrofit system represents five years of development and testing, according to Shopsmith test engineer Jim McCann. He rates this package as the biggest news in mutli-purpose tools since Hans Goldschmidt introduced his space-saving power tool in 1946. It's hard to fault McCann's assessment.

Mark V Table System Retro-fit Kit #555135, $339; with extension table kit, #555142, $450. Prices do not include local taxes or freight. Available from Shopsmith Inc., 6640 Poe Avenue, Dayton, OH 45414-2591, or call 800/543-7586 (in Ohio call 800/762-7555).

The saga of OSAGE ORANGE

Thick and thorny, Osage orange served as fencing. For the Indians, it made prime bow wood.

Before the age of barbed wire, settlers in what is now Arkansas, Oklahoma, and Texas discovered they could *plant* fences rather than build them of rock or rails. To keep livestock in or out, they propagated hedgerows of a thorny, thick-growing native tree. The stands produced an ugly, inedible, orangelike fruit.

After a few seasons, this living fence became impenetrable, and as it matured, it formed a dense windbreak 20′ or more high. As word spread, landowners from the heartland to the Atlantic Coast sought the seed to plant.

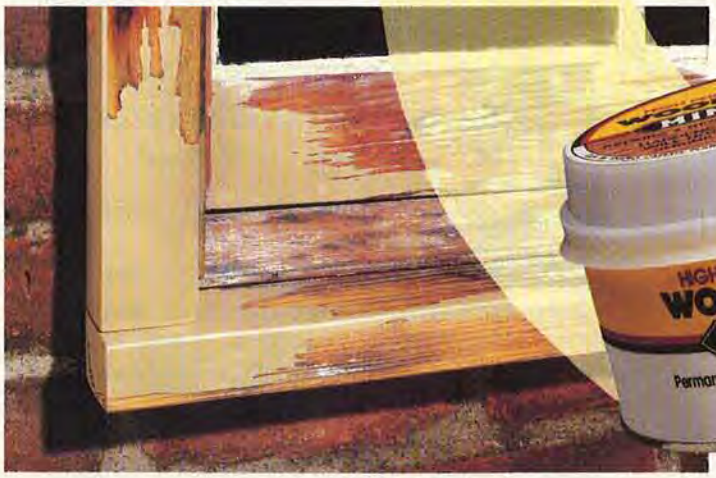
The tree was called "bodark," the settlers' pronunciation of the French *bois d'arc,* meaning "wood of the bow." For this species had first furnished the Osage Indians with wood for their bows, famed far and wide among tribes as the trustiest. Today, we know this tree as Osage orange, and you still can find surviving thickets along hedgerows from Nebraska to Massachusetts and from Wisconsin to the delta country of Mississippi.

Luckily, Osage orange adapted to a variety of climates and soil conditions, for in its original range the tree nearly met with extinction. Settlers exploited Osage orange's bright yellow, hard, resilient, and decay-resistant wood for wagon-wheel hubs and rims, pulleys, tool handles, and even fabric dye. Later, mature thickets were almost depleted to meet additional demand for fenceposts on which to string barbed wire, and ties for the rails of the nation's trains.

If you're lucky enough to find some Osage orange, ask permission to harvest a stout piece. Then, turn a bowl or make a cutting board out of it. You'll enjoy the color, and it will withstand abuse.

Photograph: Jim Kascoutas
Illustration: Jim Stevenson

®Minwax is a registered trademark ©1986 Minwax Company



At last! A wood filler for the big jobs.

Now there's a wood filler that can rescue damaged and even rotted wood—High Performance Wood Filler by Minwax.

It won't shrink, crack, or fall out. It hardens in only 15 minutes and can be sanded, planed, drilled, carved, painted, or stained in less than half an hour. And it's weather, water, and rot resistant.

It repairs almost anything made of wood, indoors or out. From windowsills and decks to woodwork and furniture... it's the wood filler for the big jobs. Look for it at your favorite store. For more information, send in the coupon.

High Performance Wood Filler to the rescue!

Minwax Company, Inc., Dept. WO-096
P.O. Box 426, Little Falls, NJ 07424

Please send free information package.

Name

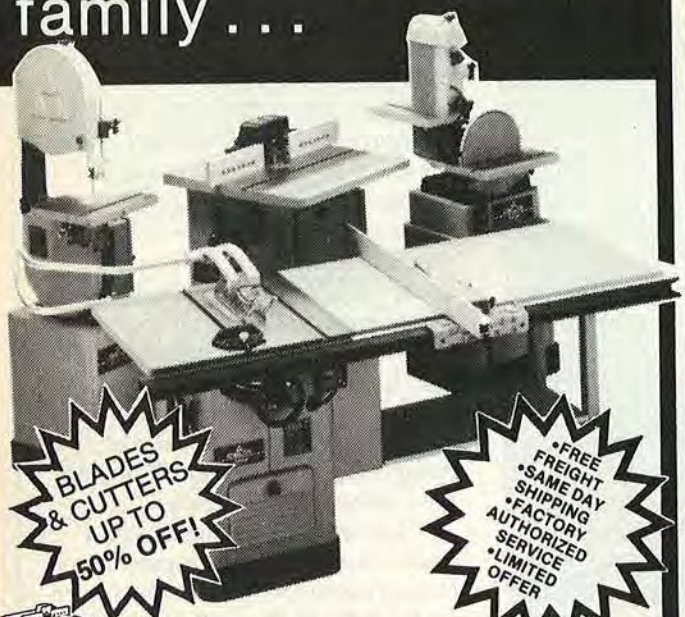
Address

City State Zip

MINWAX®

Minwax makes wood beautiful

we're proud to ship the new DELTA family . . .



SHAPERS 43-375F
3 HP, 1 PH, List $2195
Special prices on all models
$1499 FREE CUTTER

UNISAWS

34-761F, 1½ HP, 1 PH, List $1632 ..... $1299
34-763F, 3 HP, 1 PH, List $1946 ..... $1499
34-782F, 3 HP, 1 PH, Unifence, List $2164 ..... $1699

BELT/DISC COMBINATION
31-730F, 6"x12", 52-611F
Motor & Stand, List $1466 ..... $1269

BAND SAWS
28-243F, 14", W/62-142 Motor & Open Stand, List $746 .... $599
28-283F, 14", ¾ HP, Closed Stand, List $970 ..... $749

46-541S, 12" LATHE, ¾ HP, Accessories, List $2771 ..... $1389
40-601, 18" SCROLL SAW, Variable Spd., List $1117 ..... $699
37-223, 6" JOINTER, ¾ H.P., Open Stand, List $1224 ..... $949
37-315, 8" JOINTER, 49-054, 1½ HP, Closed Stand, List $1646 ..... $1449

NEW! 34-080, 10" MITER SAW, Cuts 4x4, Elec. Brake ... CALL FOR PRICE
33-150, 8¼" SAWBUCK, Frame & Trim Saw, List $707 ..... $498

PLANER FREE KNIVES! ($70 VALUE)
22-651, 13" PLANER, 2 HP, List $1729 ..... $999

TABLE SAW (EXPIRES SEPT. 30, 1986)
34-410A, 10" TABLE SAW List $1073 ... $579

10,000 TOOLS IN STOCK!

JET, JWP15H, 15" PLANER, 3HP, 230V, W/STAND $949
MAKITA, 2040, 15-5/8" PLANER $1149
MAKITA, 2030N, 12½" PLANER/6-1/8" JOINTER $1339
MAKITA, 2020, 8" JOINTER $849
MAKITA, 2030, 12" PLANER/6-1/8" JOINTER $1149
HITACHI, P-100F, 12" PLANER $949
HITACHI, F-1000A, 12" PLANER/6" JOINTER $1239
HITACHI, CB75F, RESAW $1499
BLACK & DECKER, 3590, 10" PLANER/JOINTER, 2HP, 220V . $799

acme Electric

TOOL CRIB OF THE NORTH SINCE 1948

CALL TOLL FREE FOR MIKE
1-800-358-3096

MasterCard VISA

IF YOU VALUE YOUR FINGERS..... YOU NEED A RIPSTRATE®

The RIPSTRATE holds the work tight against the fence with no hands near the blade. Makes perfect, straight cuts. Wheels lock to prevent kickbacks. *Requires no adjustment for stock width or thickness.*

Over 15,000 now in use in amateur, professional, school, government, military, and corporate maintenance shops.

One year guarantee, 30 day money back trial. $69 prepaid. Check, M.O., Visa or M.C. Free Brochure.

Write or call our toll free number: 800-421-0256.

Fisher Hill Products 4 Fisher Hill Fitzwilliam, NH 03447
Dealer inquiries invited.

Cascade Precision Tool Co.
Box 848, Mercer Island, WA 98040

PREMIUM QUALITY CARBIDE TIPPED ROUTER BITS AND SHAPER CUTTERS
— CUSTOM WORK A SPECIALTY.

FALL SPECIAL!!

15% DISCOUNT ON OUR ALREADY LOW PRICES WHEN YOU PURCHASE THIS 4 PC. ½" SHANK CARBIDE TIPPED ROUTER BIT COMPLETE CABINET DOOR SET.

REGULARLY $229.65
NOW ONLY $195.00

- Big 3½" O.D. PANEL RAISER (choice of 5 profiles) Reg. $59.95
- RAIL/STILE CUTTER
- RAIL END CUTTER (choice of 4 profiles) Both Reg. $129.95
- DOOR LIP CUTTER (choice of 2 profiles) Reg. $39.95

NEW ROUTER BITS!!
- DRAWER GLUE JOINT $39.95
- CORNER LOCK MITRE 3⅜" O.D. $49.95 For up to 1" material

FREE ½" DOVETAIL WHEN YOU ORDER A SET OF CARBIDE-TIPPED ROUTER BITS INCLUDING ⅜" RABBET, 5/32"OGEE, ½" COVE, ½" ROUNDOVER, ½" AND ¼" STRAIGHT BITS WITH EXTRA BEARING FOR BEADING. ¼" SHANK SET $64.95 PPD. ½" SHANK SET $69.95 PPD.

CARBIDE TIPPED SHAPER CUTTER PANEL RAISER—
3 WING, 5 PROFILES. 3MM THICK CARBIDE
- 4⅝" O.D. with ¾" BORE (½" BUSHING
- 5½" O.D. with 1¼" BORE (1" BUSHING) $69.95 ea.

CARBIDE TIPPED SHAPER CUTTERS

1¼" BORE W/1" BUSHING
- 4 WING
- 3 mm OR 4 mm CARBIDE
- CUSTOM MANUFACTURED
- FROM $45.00

¾" BORE W/½" BUSHING
- 3 WING
- 3 mm CARBIDE
- 60 STOCK PROFILES
- FROM $29.95

½" BORE
- 3 WING
- 2 mm
- 20 STOCK PROFILES
- $22.00 EA.

6 PC. CARBIDE TIPPED CABINET SETS

- 3 mm CARBIDE
- ¾" BORE W/½" BUSHING
- 13 STOCK PROFILES
- $149.95 TO $179.95

ORDER BY PHONE WITH VISA/MC OR SEND MO. CHECK. VISA/MC NUMBER. EXP. DATE. PHONE NUMBER
— CATALOG $1 — FEATURING OVER 200 CARBIDE TIPPED ROUTER BITS AND SHAPER CUTTERS

ORDER TOLL FREE: 1-(800)-235-0272
IN WASHINGTON STATE CALL 1-206-236-0272
10 AM - 7 PM — Monday through Saturday

MasterCard VISA

THE MAGAZINE FOR HOME WOODWORKERS
OCTOBER WOOD 1986
Print this article

EASTERN RED CEDAR

favored for fragrance and flavor

French Acadians, deported from Nova Scotia by the British in 1755 to what is now Louisiana, found a familiar softwood growing in their new land. For its red bark and red wood, they called it *baton rouge,* meaning "red stick," the name the French settlers adopted for their capital city.

Eastern red cedar, the "red stick" of the Acadians, belongs to the juniper family of conifers, one of the oldest on earth. Ancient Egyptians used a juniper to make chariot wheels in 1300 B.C. And the Dutch, who first distilled gin in the 17th century, flavored their concoction with juniper berries, a practice that continues today.

Juniper leaves and twigs also furnish a fragrant oil for medicines and perfume. But moths and buffalo beetles find juniper's sweet smell highly repugnant. That's why eastern red cedar, made into chests and closet linings, has been prized for protecting woolens since colonial times.

When large stands of large trees were abundant, eastern red cedar was used for lead pencils because it shaves so nicely. Now, an African cedar has replaced it as pencil wood, and woodworkers make use of knottier, narrower boards.

Eastern red cedar with sapwood

Eastern red cedar heartwood

Wood identification

Sometimes called red juniper and aromatic red cedar, eastern red cedar *(Juniperus virginiana)* grows from north to south in most of the eastern U.S. and even west into North Dakota and Texas. For soil, it likes every variety except wet, spongy swampland.

Eastern red cedar averages about 16″ in diameter and 20′ to 50′ tall. Rather than the needles typical of evergreens, this tree has lacelike fronds that brown with age. Its bark appears reddish-brown and shredded, and easily strips from the trunk. By autumn, eastern red cedar trees develop pale, blue-green berries, much appreciated by birds.

The wood of eastern red cedar is light, weighing about 33 lbs. per cubic foot air-dried, and, surprisingly, is 80 percent as strong as white oak. The thin, white sapwood has a pale pink hue, while the heartwood darkens to pinkish red. The oil in the wood causes its pleasant, unmistakable aroma — especially around the knots.

Working properties

Eastern red cedar has a fine grain, but a soft texture. It works easily with hand or power tools, despite the fact that it is somewhat brittle. In stability, it ranks quite high.

If you want the wood to remain fragrant, don't cover it with a finish. Otherwise, use anything but polyurethane or plastic finishes — oil in the wood makes it difficult for them to adhere.

Note: Unfinished eastern red cedar eventually becomes less fragrant as its oil hardens in the wood surface. You can renew the fragrance by sanding with fine-grit sandpaper. Fresh oil from the inner wood will rise to the surface, renewing the aroma.

Uses in woodworking

Eastern red cedar works well for trim in boats and canoes, as cedar chests, for closet linings, jewelry boxes, bookcases, carvings, and turnings.

Cost and availability

Although it's a softwood, hardwood grading standards apply because eastern red cedar is used primarily as a cabinet wood. Since clear wood is hard to come by, most eastern red cedar boards carry the "common" grading label, and a fairly inexpensive price of about $1.50 per board foot. Readily available boards rarely exceed 7″ widths, 6′ lengths, and 1″ thicknesses. Veneers, plywood, and particleboard are other products.

Illustrations: Steve Schindler
Photographs: Hopkins Associates

A PENCHANT FOR

Warm wood tones and a radiating fireplace create the perfect setting for period furniture. Here, Ken and Louise share a cup of evening tea, served from the walnut Chippendale tea table that he built.

PERIOD PIECES

Print this article

Chemistry Professor Ken Williamson challenges his skills with exacting reproductions of classic furniture

That's Ken Williamson, 51, pausing outside his center-chimney, 14-room colonial house. Colonial carpenters hung the door behind him in 1740. But Ken himself added the surrounding pediment.

Inside, you'll see the classic Queen Anne, Chippendale, and Federal-era reproduction furniture he's made. It would take an expert to tell them from the antiques he and his wife, Louise, have collected.

Yet, the 20th century has indeed made its mark in the Williamson's South Hadley, Mass. home. You'll often find Ken, who teaches organic chemistry at Mount Holyoke College, at his personal computer. But most evenings, you'll find him down in the shop, going from modern power tools to antique hand ones while building the period furniture he crafts in faithful detail. "Ken's classroom teaching doesn't show immediate results," says Louise, "but with wood, Ken sees them instantly."

Winston Churchill once said: "Our houses shape us and we shape our houses." Ken Williamson loves that quote — indeed, he's lived it.

When Ken and his wife owned a ranch-style home, Ken was making Danish modern furniture. When they bought their colonial home 15 years ago, it coincided with Ken's yearning for more of a woodworking challenge. He found it in Queen Anne, Chippendale, and Federal styles that not only were more compatible with their newly purchased home, but ones which would raise his work to a new level of excellence.

Says Ken: "Many of the classic designs have been worked out over centuries. You can't play around with them. The creativity, and the challenge, come in the decoration, not the proportions."

In the Williamson home, Ken's work looks comfortable with the antiques. And now, in the words of a colleague, Ken's good enough "to have been a foreman in the Chippendale shop."

GETTING STARTED IN PERIOD FURNITURE

You'd never suspect Ken has had little formal woodworking training. His father and grandfather both worked with wood a little, and Ken took shop in high school. Otherwise, he's self-taught.

When Ken decided to tackle reproductions, he headed for the library to research the subject. "At a library, you can pick your own starting level with a book that means something to you," he advises. (See Ken's reading suggestions at the end of this article.)

Reproduction furniture kits represent another way to get started, according to Ken. "For someone who hasn't done something like that before, putting a kit together is a good lesson," he says.

MEASURED DRAWINGS: CLASSICAL DESIGNS ON PAPER

Ken's career in organic chemistry may seem a world apart from woodworking, but Ken cites a similarity. "My chemistry research involves viewing molecules in three dimensions and working out ways to visualize them in two dimensions," he explains. "If you're designing a piece of furniture, you'd better learn to do the same thing on a piece of paper."

Down in his cramped workshop — situated in the only part of the centuries-old basement where you don't have to duck your head — Ken has a pile of drawings for work in progress. Furniture makers call them *measured drawings*, and, for reproductions, they're critical. Unlike shop sketches or plans, highly detailed measured drawings provide only minimum measurements for major features and subparts as guidance to the original proportions. The craftsman has to dimension parts and figure out construction.

At first, Ken copied drawings and dimensions for his projects from reference books. Now, he knows enough about period furniture to scale his drawings from museum photographs.

Ken holds up some full-sized templates for the cabriole legs of a new Chippendale piece as an example of why drawings are so important. He comments: "One of the subtlest things you can do in woodworking is make a cabriole leg. If it differs as much as 1/16" in some dimension, it's not going to look right."

Ken found out that one of the challenges in making period pieces lies in exactly duplicating the work of early masters, not in boundless creativity. "Creativity has to be channeled," Ken notes, "into such directions as how much elaboration

Continued

you put into the piecrust (the ornately carved rim) on the top of a candle table. The carving on the knee of the legs (shown, *right*) is about the only place to really express yourself. Even if you try to duplicate someone else's carving, your own expression comes through. It's like handwriting — I can always recognize my own work."

Ken smooths his mahogany candle table with its piecrust top, *below*. He uses fine steel wool to give a final luster to his sprayed-on finishes of lacquer or polyurethane. The detail of the carved knee, *right*, reflects the creativity of the builder.

NEVER STRAY FROM ORIGINAL PROPORTIONS

Mistakes may be woodworking's greatest teacher. In reproduction work, the errors usually concern the proportion of a piece, and you never tamper with it.

Ten years ago this chemist-craftsman started to reproduce a Philadelphia high chest (often mistakenly called a "high boy"). "To fit it into our home, I had to scale it down," Ken says. His scaled-down version still isn't finished, because Ken is not happy with the way it looks.

Another early piece taught Ken a lesson about furniture proportion and the human body. "I made a Windsor chair too narrow," he admits, "and also too short — by about ¾" — to be comfortable."

That mistake wasn't completely Ken's fault. He trusted purchased plans rather than measured drawings. He'll never do it again.

SOMETIMES, SAWN WOOD WON'T WORK

Ken has another Windsor chair in his workshop now, and he'll do justice to what he calls "one of the great pieces of American furniture."

Wait a minute — American? True, according to Ken. While the name is British, a Windsor chair from England bears no resemblance to an American version. "American Windsors are unique designs. They're extremely conservative in materials and very strong, yet light," he explains.

Windsor chairs were always painted, too — either black, green or red — in order to conceal the different kinds of wood used in them. The seat was pine, because it shaped easily. Legs were maple or cherry for strength. And ash or hickory was fashioned into spindles because they bent readily.

"Spindles for a Windsor chair must never be sawn," he says. "You can't saw them, *then* make them round. They must be split along the grain, then split again. That way, the grain runs perfectly true through the entire length of the spindle so that it will be extremely strong and flexible. And final shaping must be done with a drawknife, because you can't easily lathe-turn long spindles."

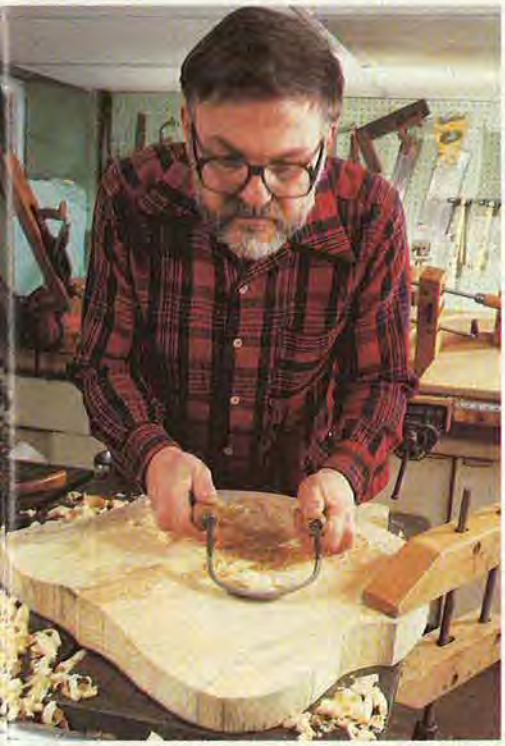
For making Windsor chairs, Ken owns a drawknife or two, and a scorp. A scorp works much like a drawknife, but has a curved blade. Ken uses it to carve the seat to form.

IT'S NOT TOOLS THAT COUNT, IT'S TECHNIQUE

"For a Windsor chair, I carve with a new scorp, but I employ traditional techniques because that's the only way to build it," Ken comments. "I use antique tools when they are the best ones to use."

Windsor chairs were always painted either black, green, or red to cover the many types of wood from which they were made. Ken likes to use high-gloss, oil-base paint.

Ken designed the decoration and the shape of the drop-leaves on this walnut Pembroke table from the Federal period of about 1820. The inlay is holly.



With a scorp, Ken carves out the pine seat of a Windsor chair. Following traditional techniques, he'll use a drawknife to shape the ash or hickory, handsplit spindles.

Many of Ken's antique tools come from farm auctions, but he's proudest of a set of 200-year-old carving chisels that came to him from an unexpected source.

His carving chisels belonged to Calvin Allen, master woodcarver for Chickering Piano Company of Boston, who died in 1887 at the age of 81. After his death, Allen's co-workers wrapped up the chisels and placed them carefully in his tool chest where they lay until Mildred Allen, the carver's 92-year-old granddaughter, brought them to Ken. As an emeritus professor of physics at Mount Holyoke, she had heard of Ken's work and wanted him to see the chisels and possibly use them. He bought them for $100, and considers them a treasure.

Besides his coveted chisels and other hand tools, Ken uses a table saw, a band saw, and a planer. But, he believes he could build period furniture with just a handsaw, a plane, some chisels, a mallet, and some measuring tools.

MODERN LESSONS IN WOOD AND FINISHES

Besides his teaching responsibilities in organic chemistry, Ken shares his knowledge of furniture design and construction with students on campus in a course on the subject, and in another about antique furniture.

"Hundreds of years ago, cabinetmakers did a lot of things wrong in terms of how wood behaves," Ken notes. "Today, our understanding of wood is much better." That means that when Ken plans a piece of furniture, he often alters grain direction from the traditional so the wood won't split.

But, as did those craftsmen of days gone by, this craftsman often uses air-dried stock, such as the favored walnut from a tree felled on campus several years ago. Besides that plentiful supply, Ken likes to use mahogany and cherry, as well as the species in Windsor chairs.

And because he wants surfaces of his pieces to stand up to daily use, he departs from the traditional shellac widely used by cabinetmakers one and two centuries ago. Instead, Ken sprays on lacquer or polyurethane, finishes that might alert most antique fanciers to the 20th-century origins of his reproductions. The average person, however, couldn't tell the difference.

DON'T BITE OFF MORE THAN YOU CAN CHEW

Like many woodworkers, Ken uses his woodworking skills to take his mind off his college work and relax. He doesn't sell his pieces, and never plans to. To Ken, building reproductions is a fulfilling hobby.

Louise Williamson comments: "Ken seems to do his best work when he's had a really hard day at the lab. He can let his mind rest and his hands do the work."

What does Ken suggest for beginners who'd like to try a period piece? "Start with a simple project, such as a night stand or a candle table. Choose one from the Federal period, without any decoration, that has a triangular shape, one drawer, and straight, tapered legs. Don't try a chair — they're the most difficult of all. Never bite off more than you can chew."

For more information about period furniture, Ken Williamson suggests the following books, available at local libraries.

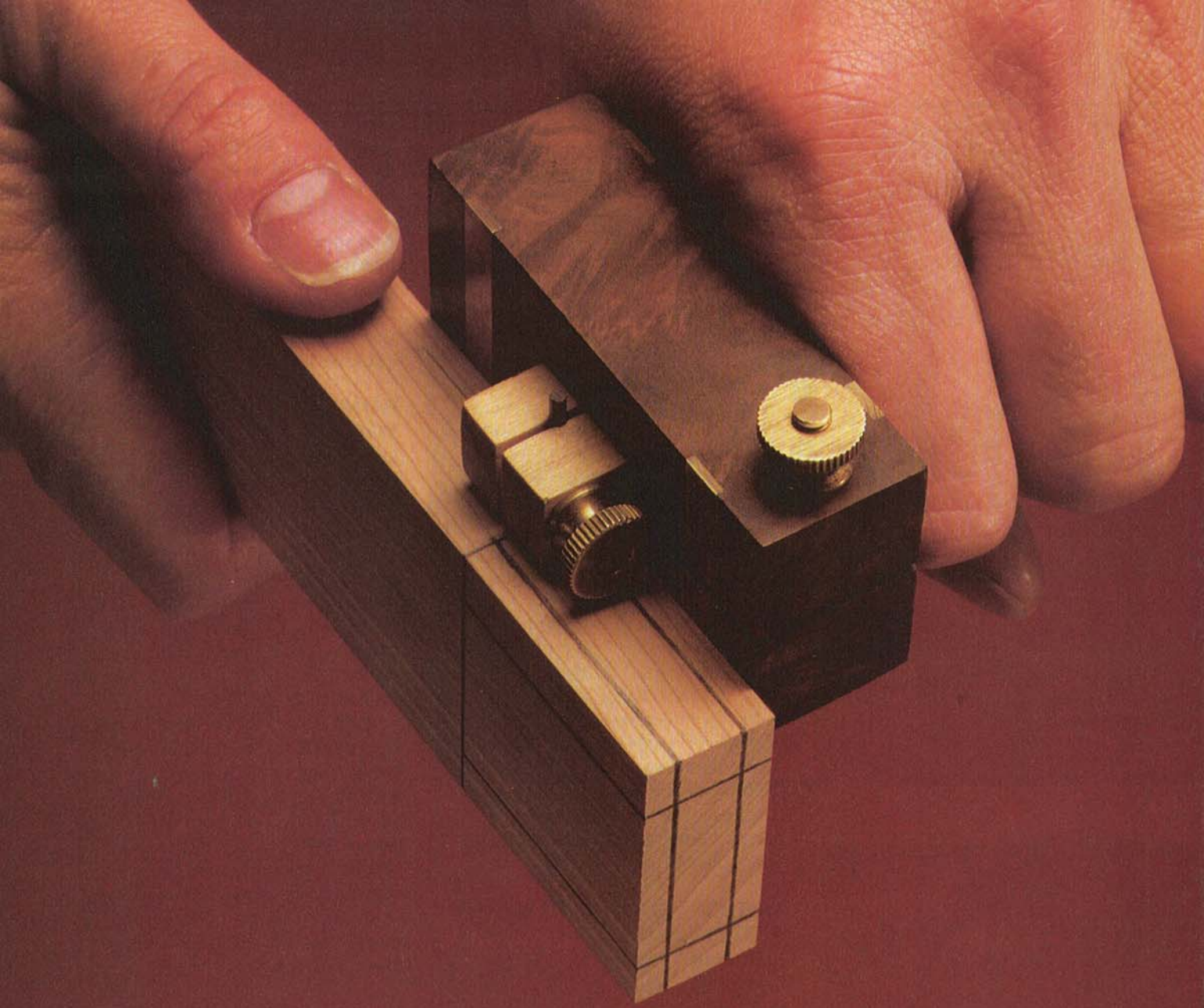
On construction:

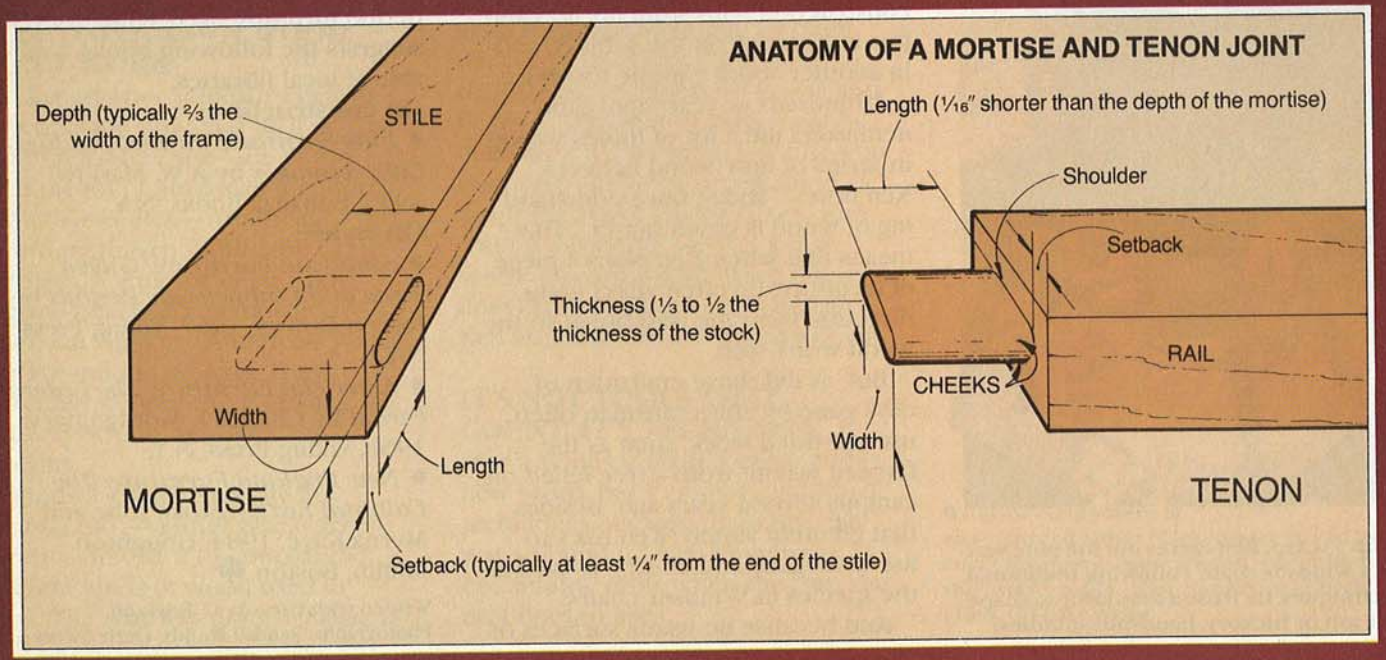
- *Fine Furniture for the Amatuer Cabinetmaker* by A.W. Marlow, 1955, Bonanza Books, N.Y.

On styles:

- *American Furniture, Queen Anne and Chippendale Periods* by Joseph Downs, 1967, Viking Press, N.Y.
- *American Furniture, The Federal Period* by Charles F. Montgomery, 1966, Viking Press, N.Y.
- *New England Furniture: The Colonial Era* by Broke Jobe and Myrna Kaye, 1984, Houghton Mifflin, Boston.

Written with Gregory C. Erickson
Photographs: Randall Foulds, Ozzie Sweet




ANATOMY OF A MORTISE AND TENON JOINT
Depth (typically ⅔ the width of the frame)
STILE
Width
Length
MORTISE
Setback (typically at least ¼" from the end of the stile)
Length (1/16" shorter than the depth of the mortise)
Shoulder
Setback
Thickness (⅓ to ½ the thickness of the stock)
RAIL
CHEEKS
Width
TENON

Print this article

BASIC MORTISE AND TENON JOINERY

Our mortising jig and a plunge router make the going easier and more accurate than ever before.

For some reason, the words "mortise and tenon" scare lots of woodworkers. Many hobbyists assume that only true craftsmen have the skills necessary to master this superstrong joint. Not so! Anyone willing to invest the time it takes to read this article, and make the mortising jig we have developed, can fashion good-looking, tight-fitting joints the first time out.

While many variations of the mortise and tenon exist, getting into all of them at the outset will only confuse you. That's why we decided to concentrate on the basics. We'll use a simple frame with hidden mortise and tenon joints as the example, but the information we present applies to other situations as well.

Before reading on, you may find it helpful to study the sketch at left. It will familiarize you with the terminology we'll be using later on. It also gives you some standard sizing information for mortises and tenons.

***Note:** If you want to know how to lay out mortise and tenon joints for raised panel doors or for joining the legs and aprons of tables (or the legs and rails of chairs), see page 83.*

CUTTING THE FRAME MEMBERS TO SIZE

After determining the finished size of the frame you want to construct, cut the stiles and rails to size. Don't forget to factor the length of the tenons into the length of the rails. Cut an extra rail, too — it will serve as a layout template.

LAYING OUT THE MORTISES AND TENONS

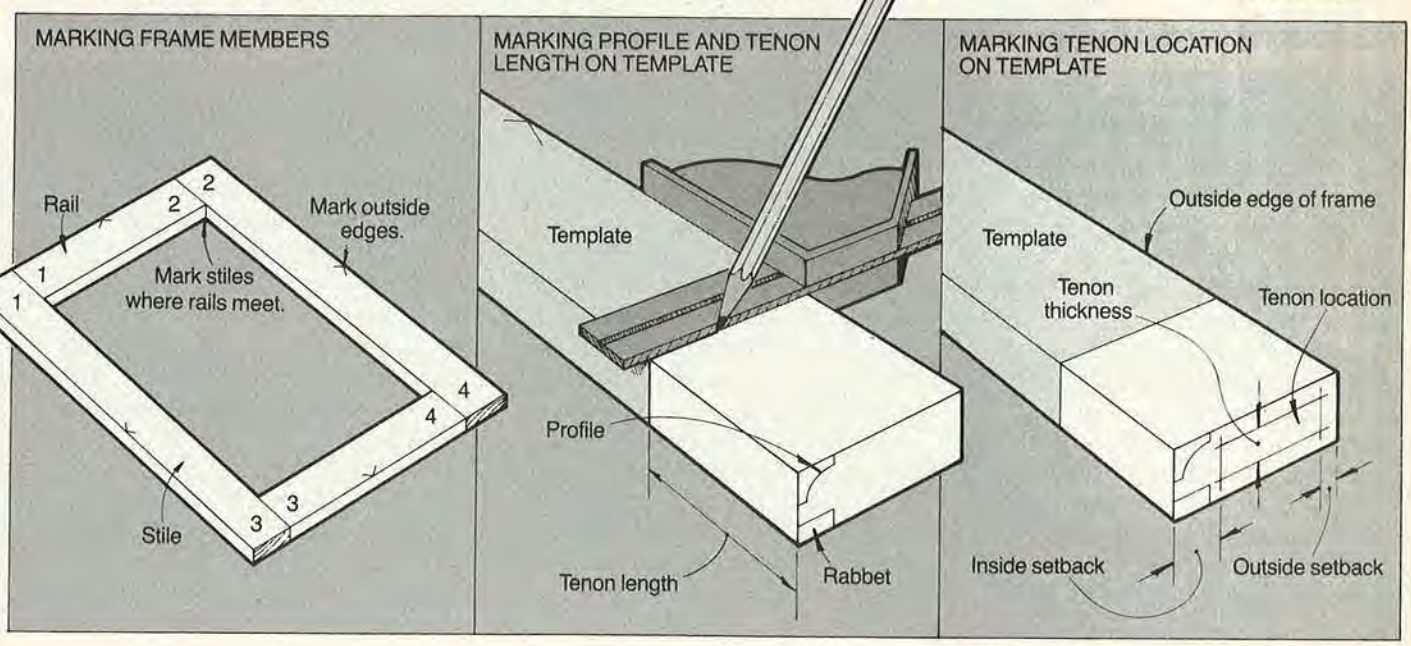
You'll be handling the various frame members a lot during and after layout. So, to avoid confusion (not to mention cutting errors), start by carefully laying them out, faceup, as they will be when assembled. Then, number each joint with a pencil, identify the outside edge of each member, and mark the inside edge of each rail on both ends of each stile, as shown, *below left.*

Now, make yourself a layout template, using the extra rail you cut earlier. First lay out any rabbets, grooves, or profiles you plan to cut into the frame members. Then, using a square, mark the length of the tenons on the template as shown, *below center.* Remember that the length of hidden tenons typically equals ⅔ the width of the mortised frame members.

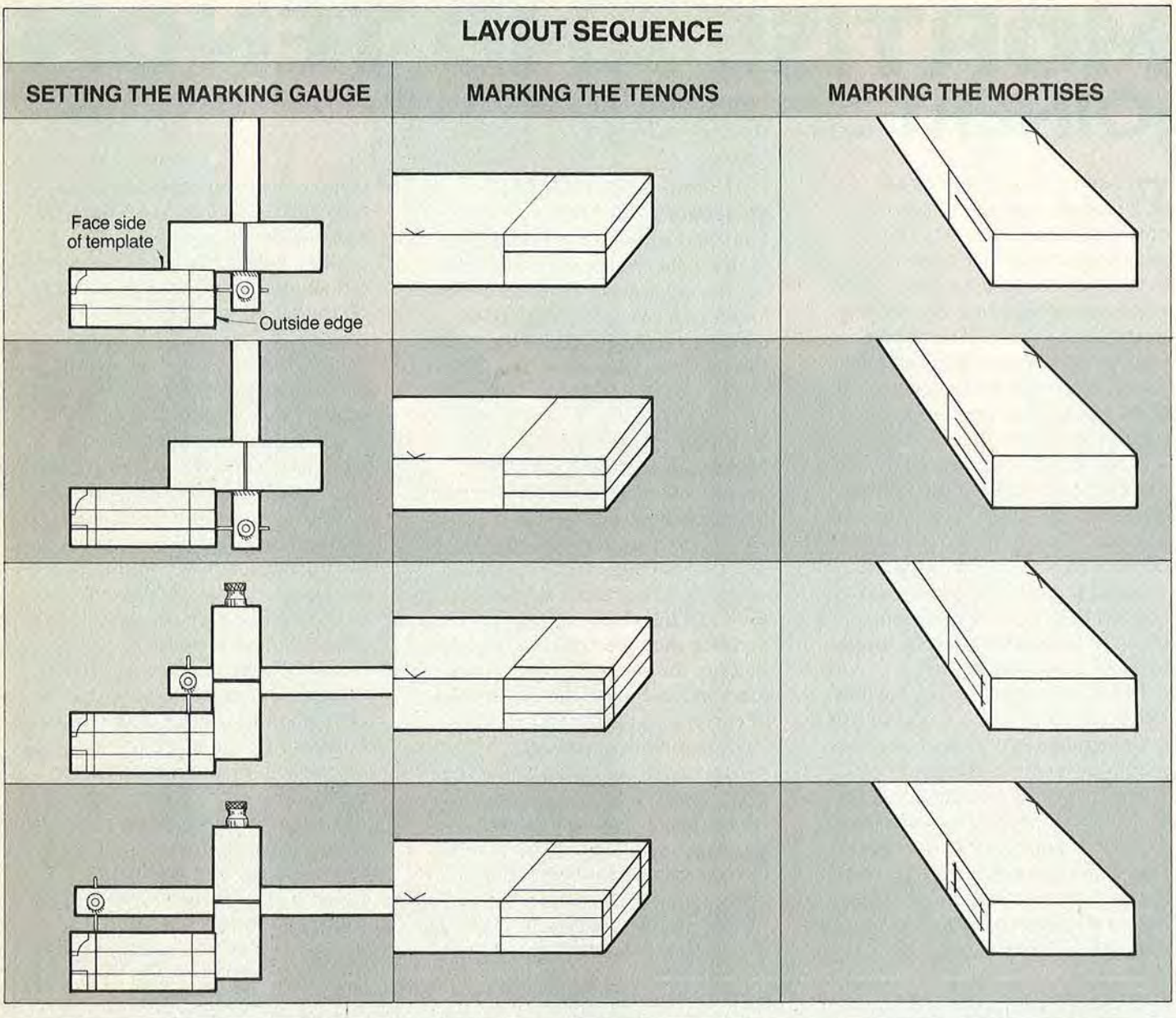
Next, with a marking gauge, lay out all four of the tenon's borders on the template where shown in the sketch, *below right.* You may want to refer back to the anatomy drawing, *opposite,* and review the standards presented there.

Once you've marked the template, use it and the marking gauge to transfer all of the lines from the template onto the frame members. The series of sketches on the following page shows you the progression we use to do the layout work. Note that once we set the marking gauge each step of the way, we mark both the mortise and tenon on all of the rails and stiles before changing the setting. Doing this ensures that the mortises and tenons will be mirror images of each other. Note also that we set the gauge from the face side of the template for both lines that define the thickness of the tenons. This is just in case the members vary slightly in thickness.

Continued



MORTISE & TENON JOINERY



OUR MORTISING JIG

IT DOES THE JOB QUICKLY AND ACCURATELY

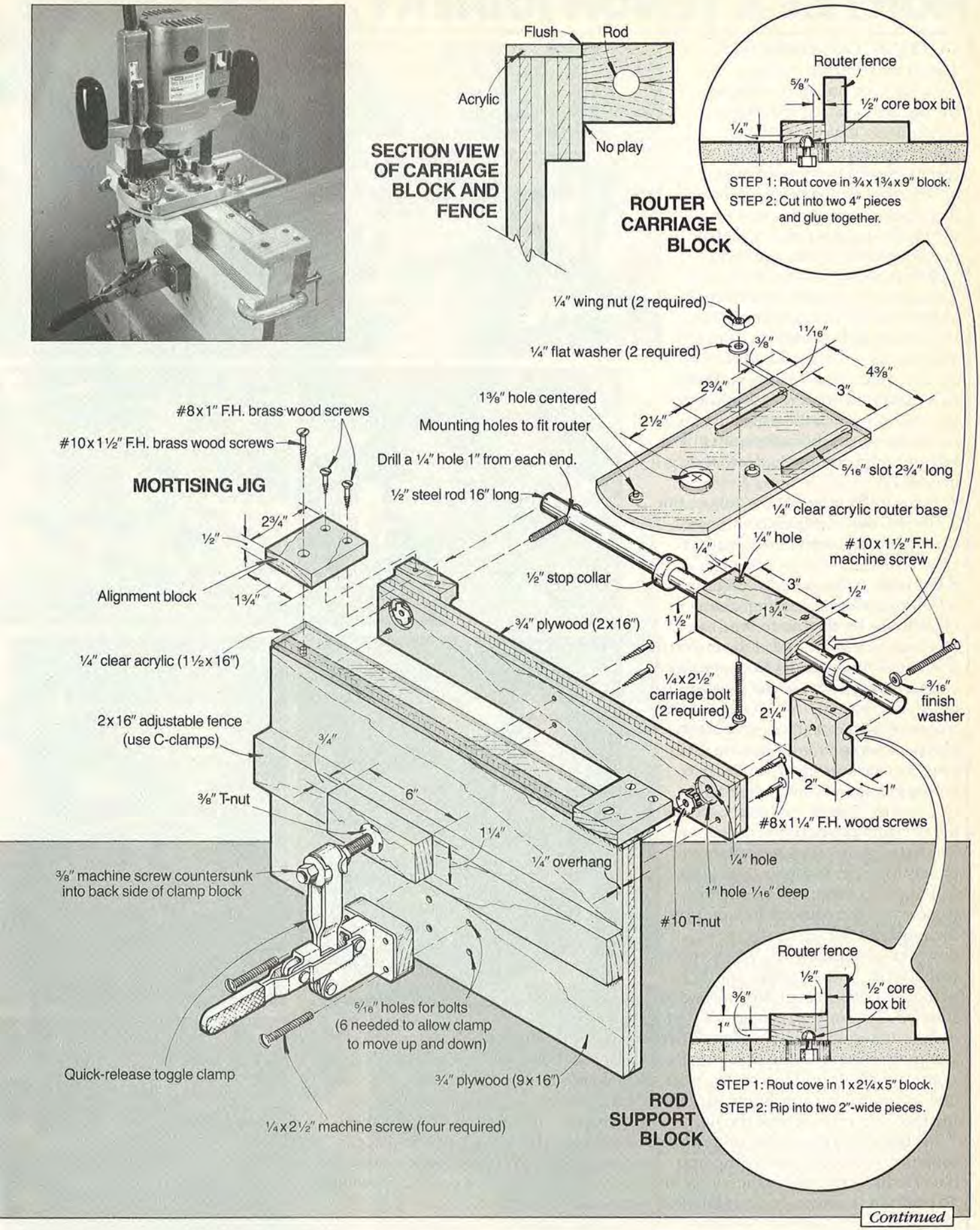
As you probably know, there are several ways to cut mortises, both by hand and with machines. Cutting mortises by hand has always seemed too labor-intensive to us, especially if we have lots of them to make. And while you can purchase a mortising attachment for your drill press, if you have one, we think our jig is faster and more accurate.

The Exploded-View Drawing and the detail drawings that accompany it *(opposite page)* give you the information you need to build the jig. And on the following page we show you how to set it up and use it.

Note: *The jig does require that you have a plunge router to make the cuts. If you don't have one already, we think the money you spend on this versatile tool will be well worth it. It not only makes cutting mortises a snap, you can also put it to good use for cutting stopped dadoes and grooves, template routing, and many other cutting chores. Several router manufacturers have one or more plunge models in their line. Also, you'll need a long-shanked, carbide-tipped straight router bit.*

BUYING GUIDE

- ***Quick-release toggle clamp.*** Catalog no. 173-003, $16.95. Woodworker's Supply, 5604 Alameda, NE, Albuquerque NM 87113 (800/645-9292).
- ***Stop collars.*** ½" set collars. Stock no. S/C ½, 65¢ each. Standard Bearings, P.O. Box 823, Des Moines, IA 50304 (515/265-5261).

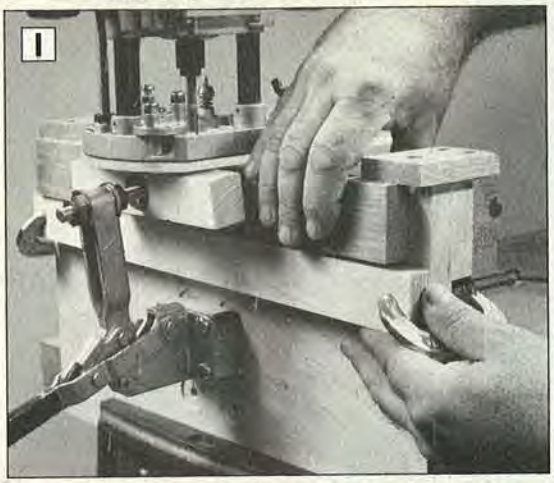

Flush
Rod
Acrylic
No play
SECTION VIEW OF CARRIAGE BLOCK AND FENCE
Router fence
5/8"
1/2" core box bit
1/4"
STEP 1: Rout cove in 3/4 x 1 3/4 x 9" block.
STEP 2: Cut into two 4" pieces and glue together.
ROUTER CARRIAGE BLOCK
1/4" wing nut (2 required)
1/4" flat washer (2 required)
3/8"
11/16"
4 3/8"
2 3/4"
3"
1 3/8" hole centered
Mounting holes to fit router
2 1/2"
Drill a 1/4" hole 1" from each end.
5/16" slot 2 3/4" long
1/2" steel rod 16" long
1/4" clear acrylic router base
#8 x 1" F.H. brass wood screws
#10 x 1 1/2" F.H. brass wood screws
MORTISING JIG
2 3/4"
1/2"
Alignment block
1 3/4"
1/4"
1/4" hole
#10 x 1 1/2" F.H. machine screw
1/2" stop collar
3"
1/2"
1 1/2"
1 3/4"
3/4" plywood (2 x 16")
1/4" clear acrylic (1 1/2 x 16")
1/4 x 2 1/2" carriage bolt (2 required)
3/16" finish washer
2 1/4"
2x16" adjustable fence (use C-clamps)
3/4"
3/8" T-nut
6"
2"
1"
#8 x 1 1/4" F.H. wood screws
1 1/4"
1/4" overhang
1/4" hole
3/8" machine screw countersunk into back side of clamp block
1" hole 1/16" deep
#10 T-nut
Router fence
1/2"
1/2" core box bit
3/8"
1"
5/16" holes for bolts (6 needed to allow clamp to move up and down)
Quick-release toggle clamp
3/4" plywood (9 x 16")
STEP 1: Rout cove in 1 x 2 1/4 x 5" block.
STEP 2: Rip into two 2"-wide pieces.
ROD SUPPORT BLOCK
1/4 x 2 1/2" machine screw (four required)

Continued

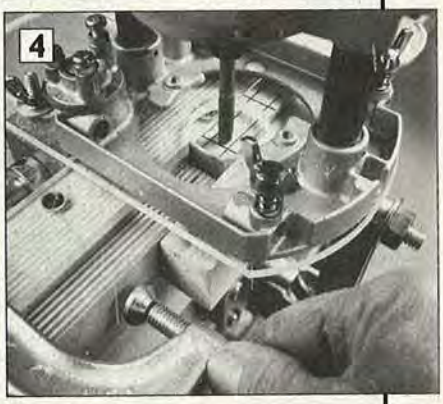
MORTISE & TENON JOINERY

CUTTING THE MORTISES

1 Start by securing the jig in a vise. Then, fit one of the stiles in the jig, and position and clamp the fence so that the stile fits snugly against the alignment blocks. **Note:** Always check to be sure that the face side of the piece being mortised is against the jig. Doing this ensures that the face side of frame members will be flush with each other.



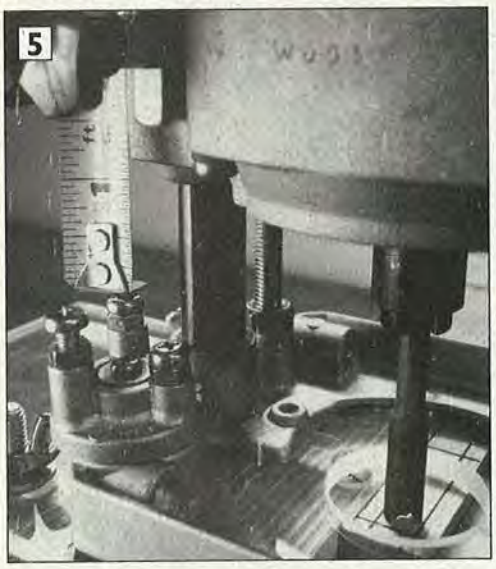
2 Slide one end of the stile toward the center of the jig, and clamp it there with the hold-down clamp. Now, loosen the wing nuts holding the router base in place, and carefully center the router bit over the mortise. Retighten the wing nuts. Don't worry too much about the router base being exactly perpendicular to the jig; it needn't be.

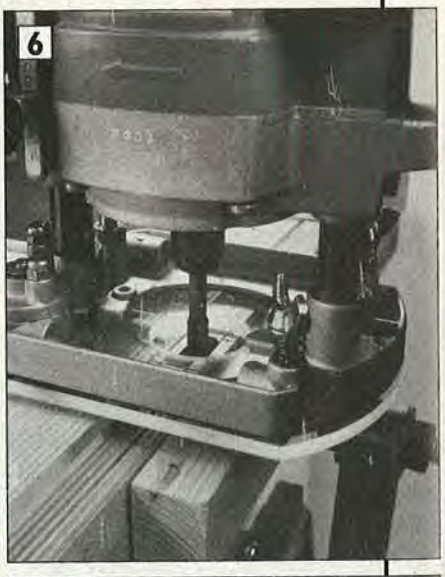


3 To limit the travel of the router, line up the bit with each end of the mortise and set the stop collars with an allen wrench.

4 To ensure consistent placement of succeeding mortises, clamp a stop block to the jig. Be sure to snug the block up against the end of the material.

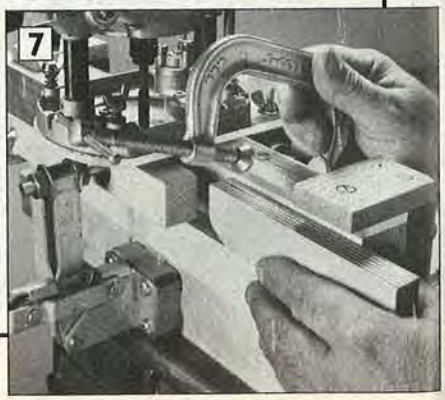
5 When setting the depth of cut, keep in mind that you want the mortise to be approximately 1/16" deeper than the length of the tenon. This extra depth forms a reservoir for glue that will be forced to the bottom of the mortise during glue-up. If you don't provide space for the glue to build up, even with heavy clamp pressure you may not be able to bring the stiles and rails completely together to form a tight joint.

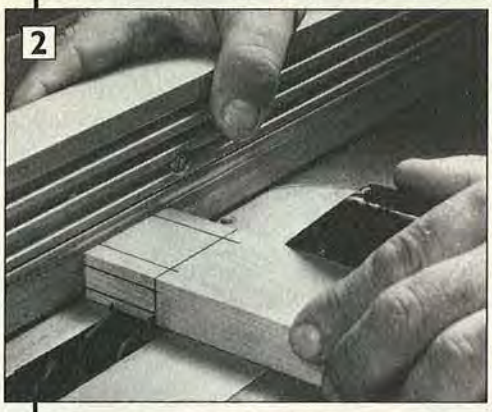




6 It's best to make several shallow passes with the router when cutting the mortises. We generally move down in 1/4" increments. When you've reached the bottom, make another plunge at both ends of the mortise to remove any minor irregularities that may be left from previous cuts. When you're finished with the first mortise, remove the stile and insert the other one, again making absolutely sure that the face side rests against the jig.

7 To cut the mortises at the other end of the stiles, you need to move the stop block to the other side of the router bit. To position it correctly, first slide the router to the right until it makes contact with the stop collar. Then, insert one of the stiles into the jig, face side in, carefully aligning the router bit with the right-hand end of the mortise, and clamp the stock in place. Now, clamp the stop block against the end of the stile, and cut the remaining mortises as before.





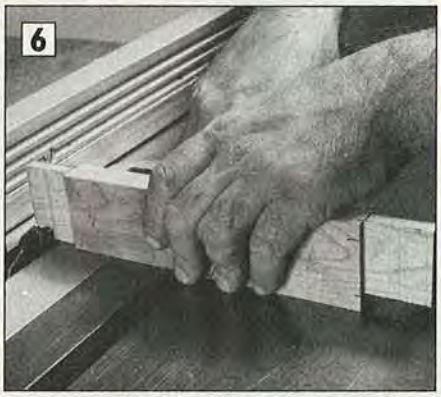
CUTTING THE TENONS

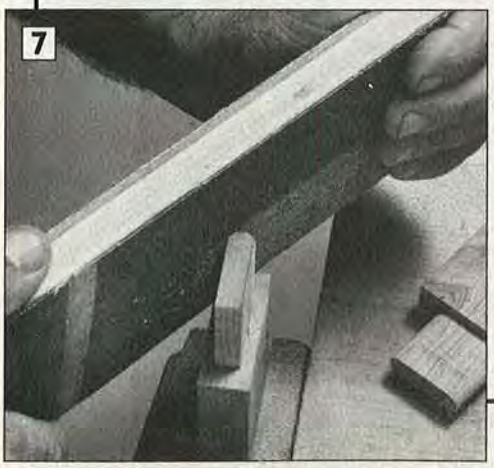
1 Place one of the stiles face side down, on your table saw, and set the height of the blade, using the mortise as a guide.

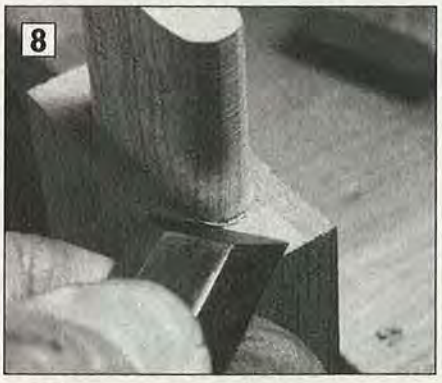
2 Now, using your layout template, set the rip fence to control the tenon length. To ensure that the template is perpendicular to the rip fence, hold the template against the miter gauge.

3 To test the blade height setting, position your layout template, face-down, on the table saw, and make one pass at the end of it. Then check it against one of the mortises as shown. Make any necessary adjustments.

4 Remove the material *from the face side* of each end of each rail. You will notice some saw marks left by the dado blade, but don't worry about them. The tenons needn't be smooth.







5 Again using your template, this time with the *back side facing down*, cut away a portion of the material from its back side. Now, check the fit of the tenon in one of the mortises. You want a snug, but not a tight, fit. Raise or lower the blade to adjust the thickness of the tenon, if necessary, then remove the material from the back side of each end of each rail.

6 To remove the material from the outside and inside setback portions of the tenons, turn once again to your trusty template, elevate the blade to the proper height for each setback, make test cuts on your template, check them against the mortise, and remove the remaining material.

7 To round off the corners of each of the tenons, we use a sanding belt wrapped around a piece of plywood. With it, we chamfer each corner and round it over slightly. Take care not to sand the top and bottom cheeks of the tenons, though. By doing so, you can cause distortion of the frame members. Also be sure to hold the sanding block square to the tenon. Accidentally beveling the tenons will weaken the mechanical strength of the joint.

8 After rounding the corners, you'll still need to remove some material at the base of the tenons. Otherwise, you'll find that the joints won't close all the way. We use a chisel to remove the excess material.

GLUING AND CLAMPING THE FRAME

If you've made all of your cuts carefully, this part of the project should be a piece of cake. It's a good idea to dry-clamp the frame to make sure that the members fit together tightly and that the face sides of the frame members are flush.

If everything checks out, apply glue to both the tenons and the mortises, assemble the frame, and clamp until the glue sets up. Be sure to check the frame for square while the glue is still wet.

Produced with James R. Downing
Written by Larry Clayton
Photographs: Hopkins Associates
Illustrations: Bill Zaun

FASCINATING FIGURE

A Glimpse at 7 of the Forest's Finest, Each with a Tale to Tell

Figured wood makes an eye-catching accent when combined with straight-grained stock in your projects. And when you know how and why Nature created it, your work becomes a story in itself.

Trees, like people, are individuals. One tree, felled and opened by the saw, may contain beautifully figured wood. Its neighbor a few feet away may turn out quite plain. Even within the same tree, figure can occur in one area and not in another. You can also find more varied types of figured wood in one species than another, and trees which produce spectacular figure of just one type in limited quantities. That's why figured wood has always been eagerly sought and highly prized for special projects.

You can't consider figured wood rare, only special. Because it represents only a small portion of all the wood available, and in most cases requires extra processing, that specialness translates to higher cost. But used sparingly in your woodworking, figured wood becomes an accent, elevating a project above the ordinary.

Where do you buy figured wood? Most hardwood dealers offer some figured solid stock as well as veneers, and they can special order to fill your requirements. Many mail-order wood suppliers carry a variety (check our advertisers and "Facts About Figure" on page 89).

Here and on the following pages, you'll see some spectacular examples of the many figures available, what created them, and how other woodworkers use them.

STUMP FIGURE: BEAUTY BELOW GROUND

Sometimes, you really have to dig to find fine figure. Loggers with a market for stump wood harvest dazzling figure by extracting a tree's entire stump and root system from the ground. With luck, the largest root, called the "tap" root, will yield one or more 3"- to 4"-thick pieces about 30" long. Sections of the stump will be figured, too.

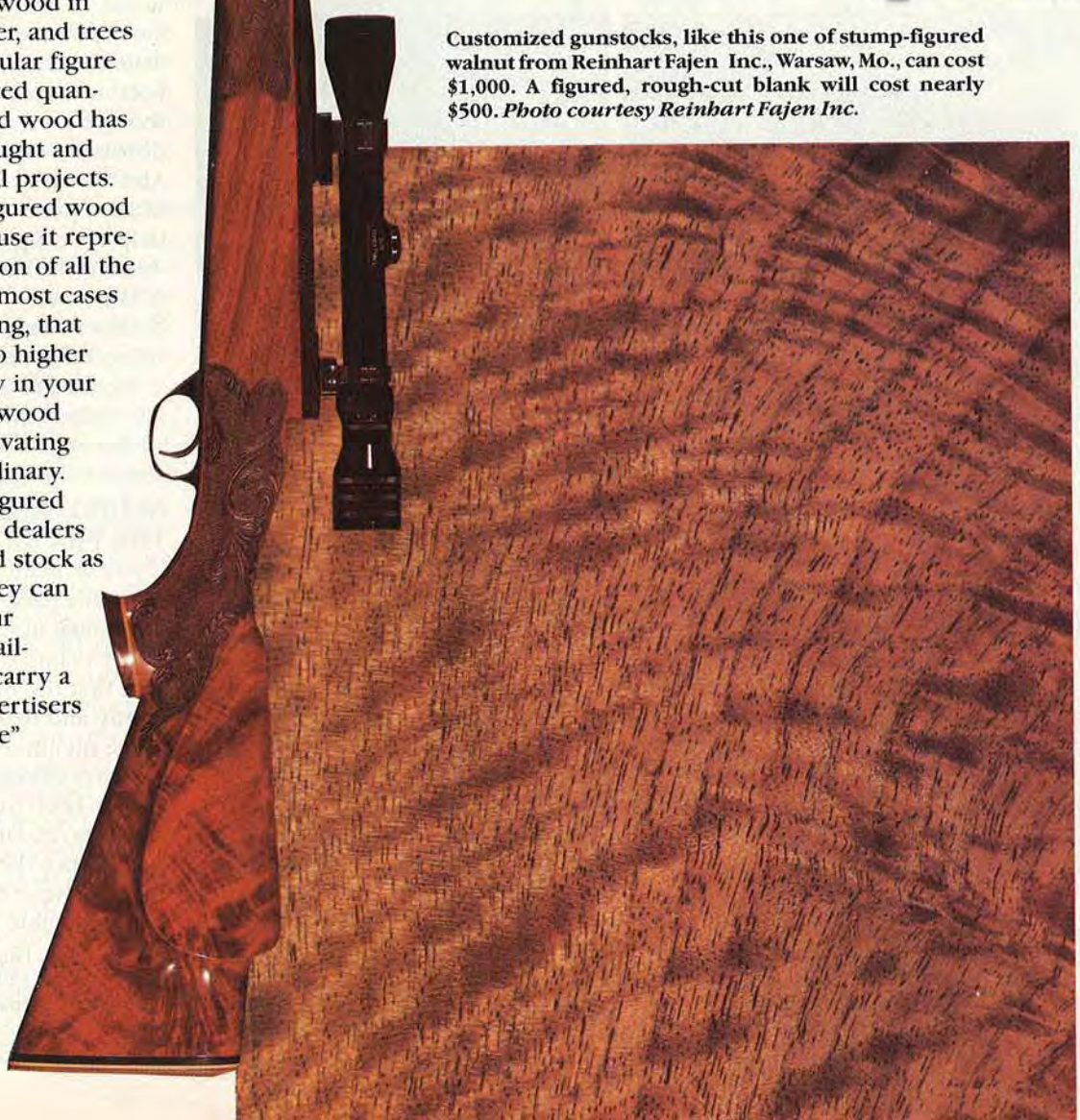
Why such beauty below the ground? As roots grew, combined, and developed offshoots to feed and support the mass above, the grain direction became whorled, interrupted by the rays of new growth in cyclic spurts.

Best in: Walnut, hard maple, myrtle, manzanita, elm, pecan, and some fruitwoods.

Availability: In 3"- 4"-thick cuts of short length, and in veneer.

Cost: Very expensive. Thick stock $100 and up per piece. Veneers, from $1 per square foot.

Print this article



Customized gunstocks, like this one of stump-figured walnut from Reinhart Fajen Inc., Warsaw, Mo., can cost $1,000. A figured, rough-cut blank will cost nearly $500. ***Photo courtesy Reinhart Fajen Inc.***

The curly maple in this band-sawn box came from a park tree felled for firewood. The tree had engulfed a park bench placed next to it long ago.
Crafted by James R. Downing

CURLY FIGURE: WAVES OF GRAIN

In Japan, the trunks of an ash called *tamo* are bound when young with a heavy rope and left to mature. When harvested and sawn, the wood displays superb curly figure. The reason: Constriction causes a break in the normally even flow of nutrients through the wood. In response, the tree actually grows in spurts, producing wavelike grain that resembles water flowing over a rock-strewn streambed.

The same thing happens naturally when a tree grows over and around something lodged against it, such as a park bench, barbed wire, or a vine. Curly figure will run throughout the tree.

Best in: Maple, cherry, and walnut. Pecan can be quite exquisite.
Availability: As lumber and veneer.
Cost: About 30 cents more per foot in lumber and veneer than nonfigured.

Stringed instruments benefit from the acoustics created by the uneven grain of bird's-eye maple. This dulcimer has unusually dense figure.
Crafted by Don Mostrom

BIRD'S EYE: A BUDDING PROMISE

What makes a tree suddenly decide it wants more limbs, then just as quickly change its mind? Even wood technologists can only guess at the reasons behind this phenomenon, but they do know it causes bird's-eye figure. Those little eyes were once destined to be more tree!

You can sometimes spot a tree with bird's-eye potential. Little bumps, or pimples, on the bark suggest the possibility.

Bird's-eye occurs in all tree species, but only in *one part* of a tree. That may be because only one part of the tree received the budding stimuli. There's also a rare, enlarged bird's-eye figure called "fish-eye," which looks like a salmon peering out at you.

Best in: Maple, walnut, white oak, cherry, and some exotic hardwoods.
Availability: In boards, veneer.
Cost: Around $1 more per foot of volume.

Continued

FASCINATING FIGURE

Fiddleback walnut veneer adds dazzle to the design of this fold-out tabletop. Close-knit stripes across the grain mark the wood as exceptional. Solid stock such as this would be rare, and costly. *Crafted by Paul McClure*

FIDDLEBACK: NOT JUST FOR DO-SI-DO

In the 1800s, a violin without a back made from closely striped maple wasn't fit for a hoedown. Today, we call any wood with that figure fiddleback, but its use as an interesting twist in color or as a design feature has spread far beyond musical instruments.

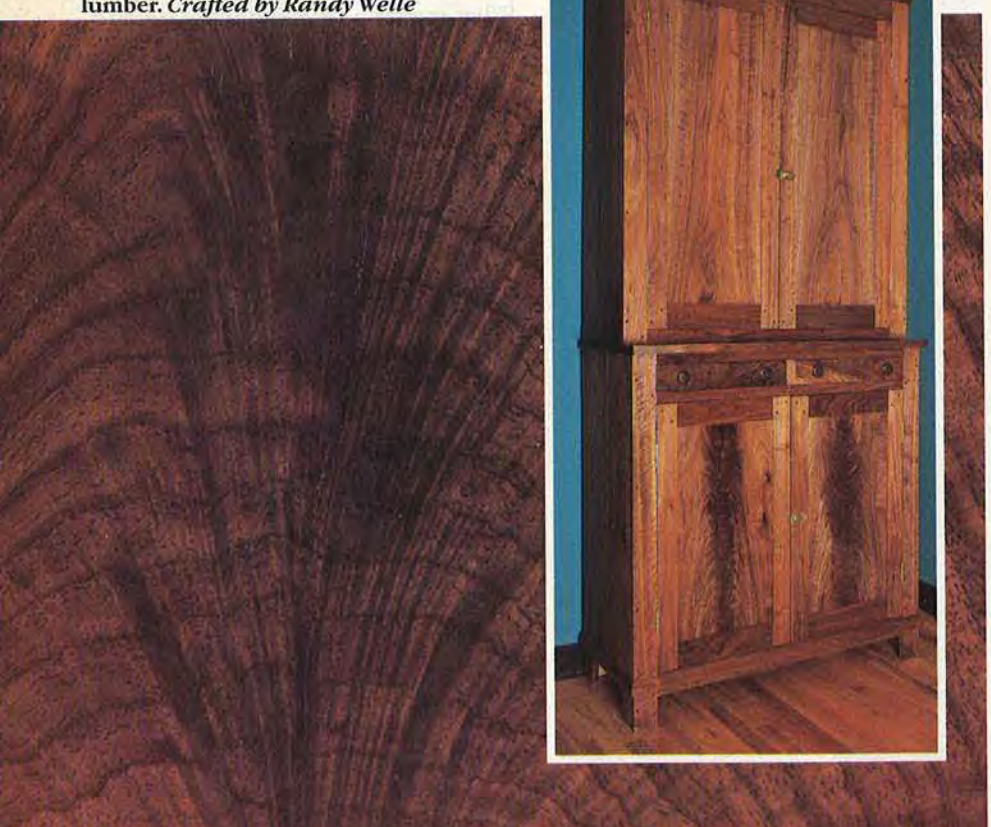
Fiddleback figure comes from trees that have had their growing process interrupted, as curly figure has. But to classify as fiddleback, the cross-grain stripes have to be much closer together than in curly figure — in the neighborhood of 9 or more per inch. While no one actually counts the density of stripes, woodworkers prize fiddleback when they see it.

Best in: Maple, walnut, and mahogany.

Availability: Veneer. Harder to get in lumber.

Cost: Approximates bird's-eye.

This solid-walnut replica of an 1840 china cabinet was made using only hand tools. All stock, including the crotch wood on the lower doors, came from the same tree, which was sawn by steam power into lumber. *Crafted by Randy Welle*



CROTCH WOOD: LOOK FOR AN EQUAL DIVISION

Horsetails, feathers, fans — you'll see all these in the swirls, spirals, and splashes of crotch wood.

Except for towering conifers, all trees have crotches, where the main trunk divides on its way to the branching canopy. But the best crotch for figure comes just below a division into two equally sized members. The larger and more equal the limbs are, the longer the crotch and the lovelier the figure.

Growth rings and grain in crotch wood have gone wild in the tree's division and realignment. If you were to saw crotch wood into slices starting in the sapwood, the figure would become progressively more impressive as you neared the heartwood.

Best in: Walnut, maple, and cherry. Others pretty. Oak is bland.

Availability: Rare in lumber, except for 3″- 4″-thick blanks. Common in veneer.

Cost: Veneer about $2 per square foot; blanks start at $100.

BURL: FOREST FIRST AID

Trees heal wounds themselves — not with a bandage, but with a burl. Burls slowly form over most wounds like a permanent scab. Insects or parasites in a tree can also trigger this protective mechanism. In Europe's Carpathian Mountains, a soil parasite causes elm trees to burl extensively, producing world-renowned figure.

Because most burls are small and often hollow, they're primarily made into veneer. Manufacturers peel them, just as you would an apple, then cut the spiraling curl into sections and match and rejoin them.

Best in: Aspen, elm, and olive. Walnut proves elegant, too. Oak and maple burls are less highly figured.

Availability: Veneers, solid burls.

Cost: About $3 square foot in veneer, burls at varying prices by weight or size.

An Aaron Willard-style 1790 tall-case clock impresses you with its door and base faced with walnut burl veneer. Clockmakers often use burl. Carpathian elm burl, shown close up, rates highly. *Crafted by William Hopkins, Sr.*

KNOTS: WORTH A SECOND LOOK

In the strictest sense, knots don't count as figure. Yet, you can use knots and the eddying grain around them effectively. And they, too, have a story that starts deep inside the tree.

Knots represent lost limbs: In the heartwood, the trauma occurred long ago; in sapwood, more recently. If you see a dark ring around a knot, that's ingrown bark, a warning that the knot will eventually fall out when the bark works loose.

Best in: All lower-grade boards.

Availability: Abundant.

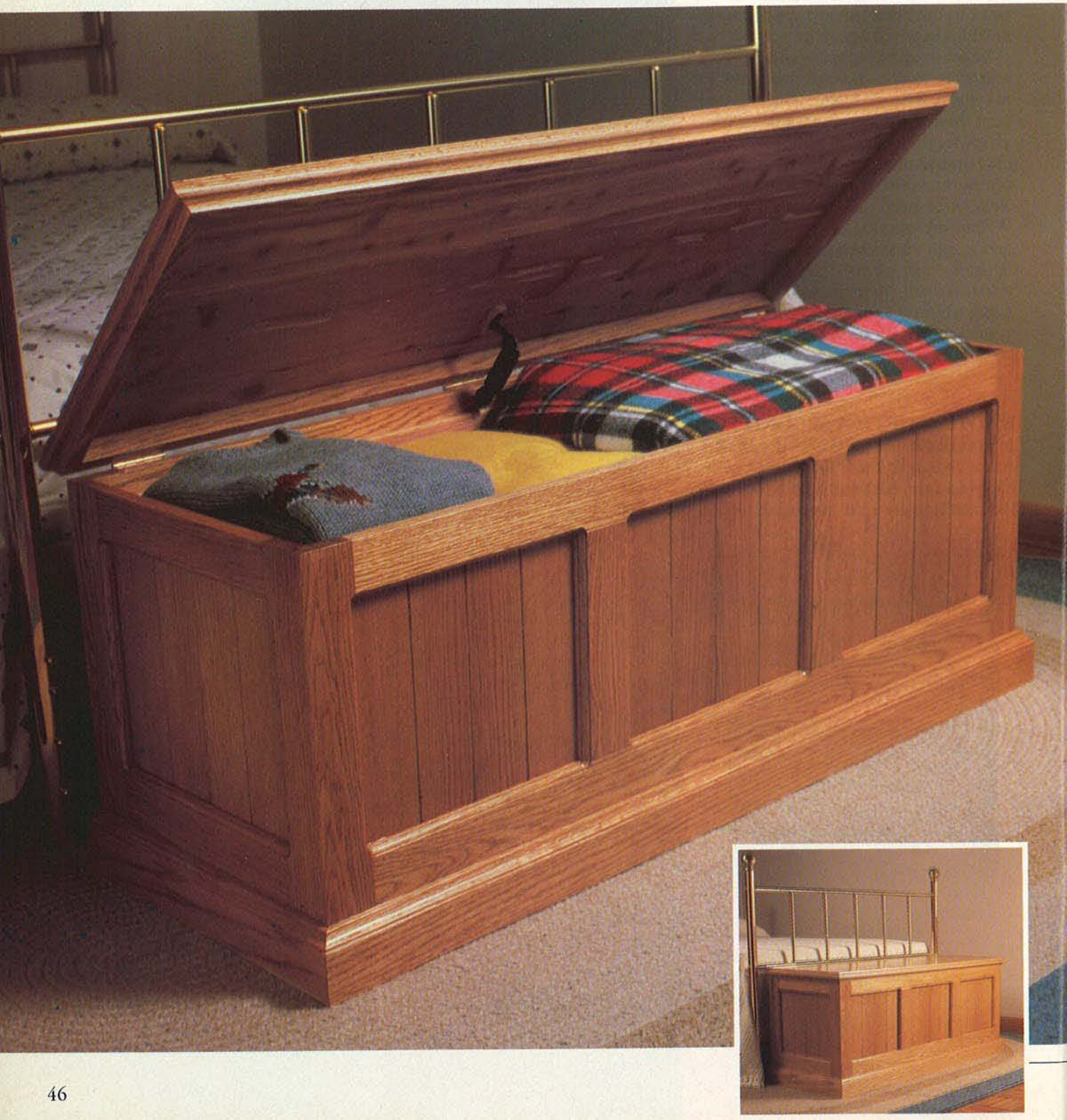
Cost: Inexpensive.

A Swedish craftsman made this empire-style desk and chest over 100 years ago, using lowly knots advantageously. The wood could be pine or birch — the exact species is unknown. Many knots are sound and can be decorative. *Courtesy of The Classics, Designer Interiors*

See related article, "Facts About Figure" on page 89.

Produced by Peter J. Stephano, with Wood Technologist Paul McClure
Photographs: Hopkins Associates, Jim Kascoutas, Ed Sargeant

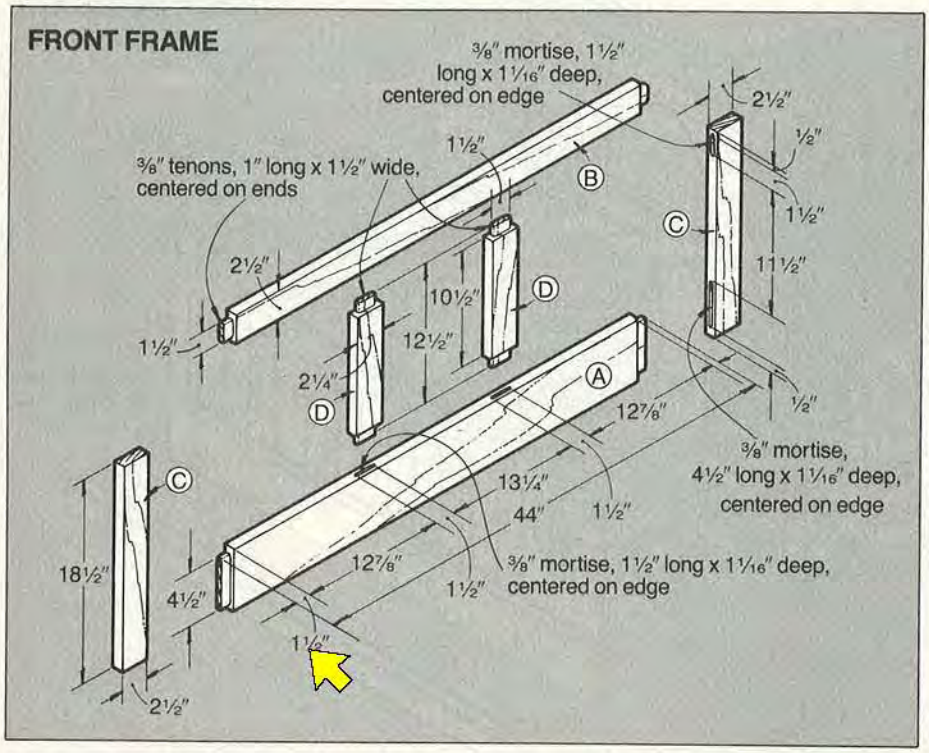
An Heirloom Chest

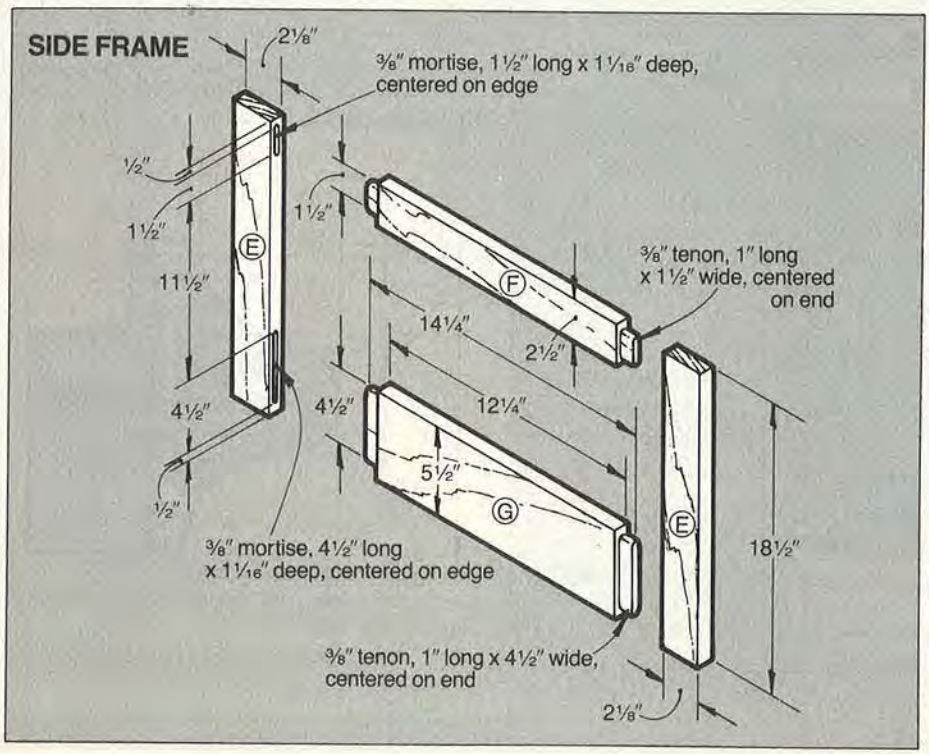


to Cherish

There's *nothing* like the fragrance of cedar. And no wood matches the durability and popularity of oak. That's why we combined the two in this mortise-and-tenon-framed storage chest.

Print this article





CONSTRUCTING THE FRAME

1 Cut the front and back frame members — rails (A and B), stiles (C), and mullions (D) — to the sizes listed in the Bill of Materials. Note that the back frame does not have the two center mullions (D).

2 Cut the side frame members — stiles (E) and rails (F, G) — to size.

3 Lay out and cut the mortises and tenons in the frame members where indicated in the Front and Side Frame Drawings, *left.* If you're not familiar with how to make mortise and tenon joints, please refer to the "Basic Mortise and Tenon Joinery," *page 36*, for the particulars.

4 Glue and clamp the front frame together, checking for square, and adjusting if necessary. Repeat the procedure with the other frames. After the glue dries, scrape off the excess, and sand the joints smooth on both sides.

5 Fit your router with a rabbeting bit, and rout ½" rabbets ¼" deep along the inside edges of all four frames where shown in the Exploded-View Drawing on the following page. (We used a scrap of ¼" oak plywood to check the depth.) Square the rounded corners with a chisel. The rabbets will later house the oak plywood panels.

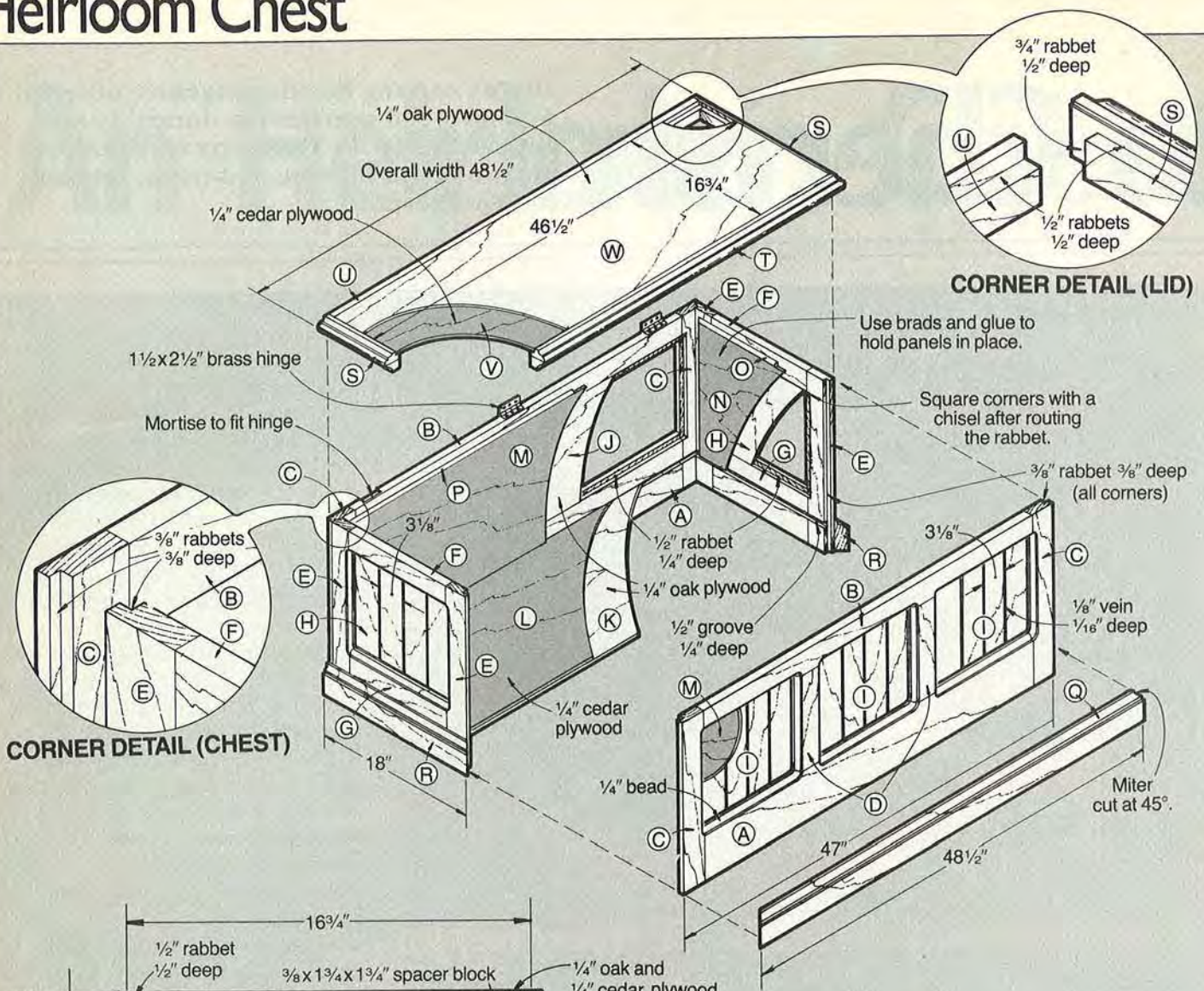
6 Now, turn the frames over, and rout a ¼" bead along the inside edges of all four frames where shown in the Exploded-View Drawing.

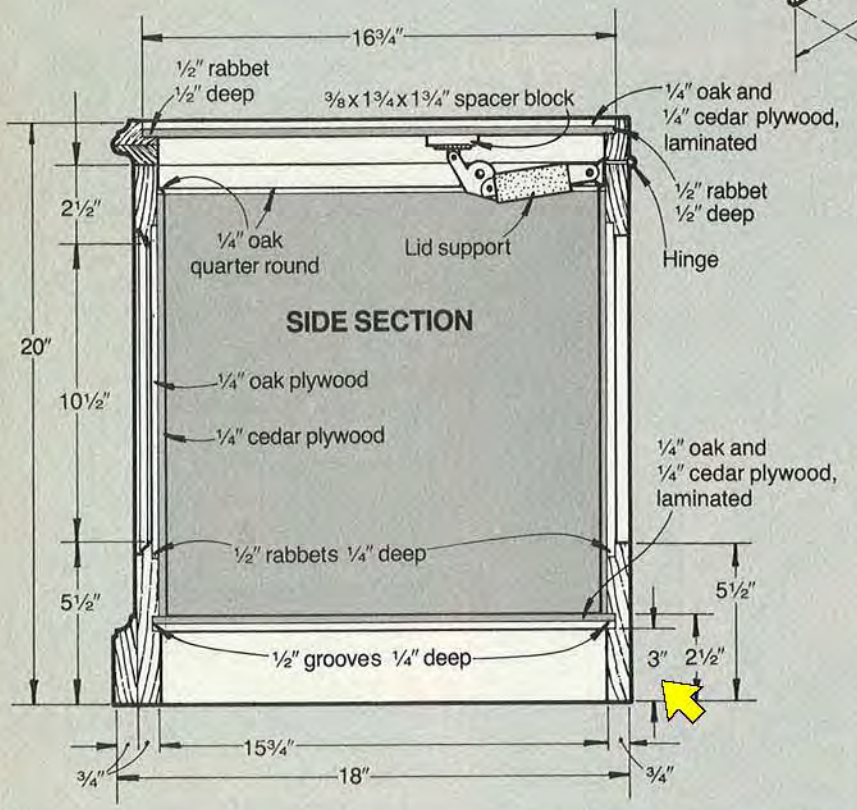
7 Attach a dado blade to your table saw, and cut a ½" groove ¼" deep 2½" up from the bottom of each of the four frames for the chest bottom where shown in the Side-Section Drawing, *page 48*.

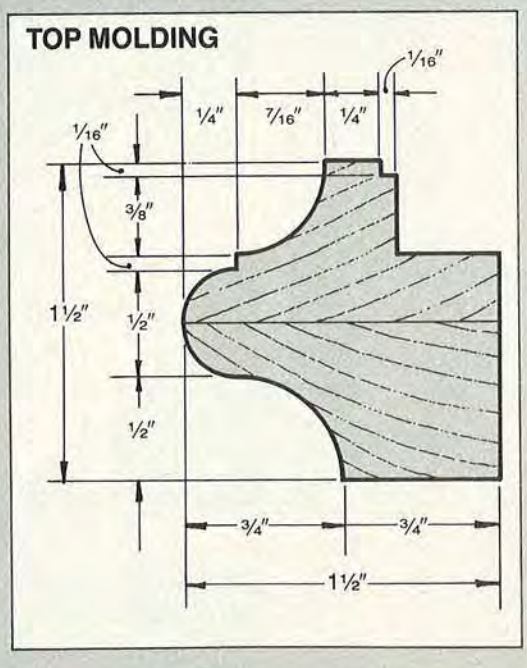
8 Cut a ⅜" rabbet ⅜" deep along each end of each frame where shown in the Chest-Corner Detail of the Exploded-View Drawing.

Continued

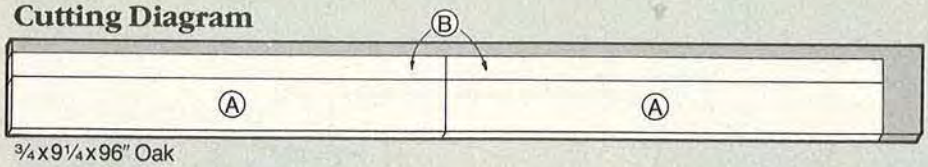
Heirloom Chest



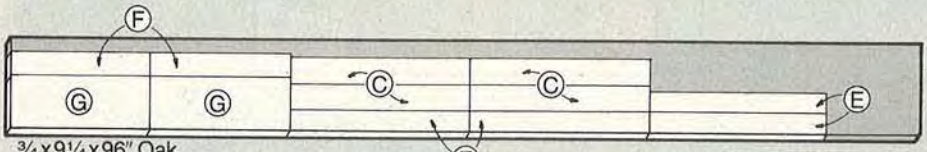




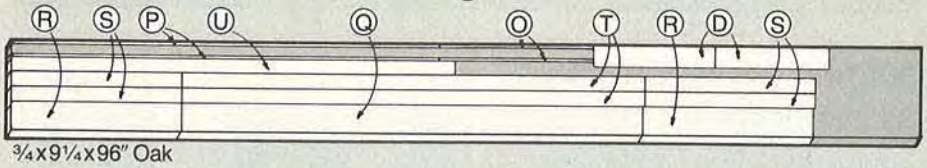
Cutting Diagram



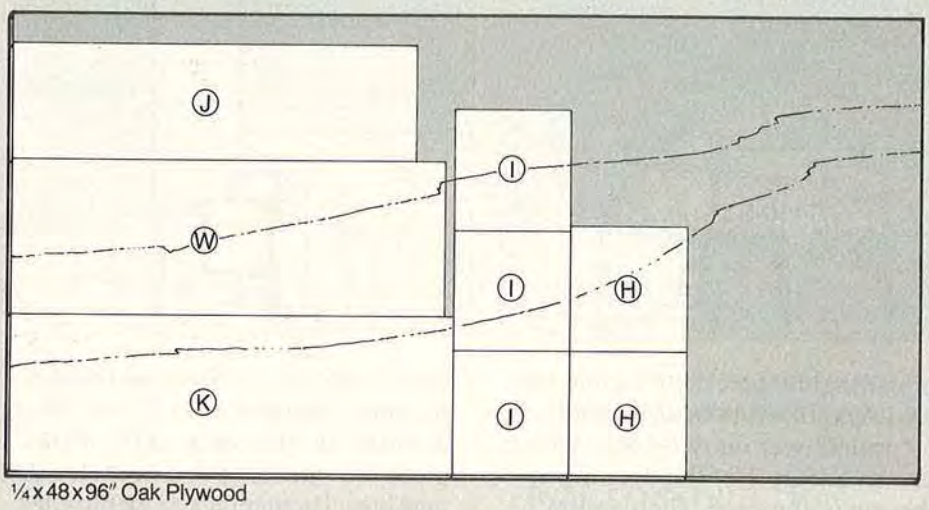
¾x9¼x96" Oak



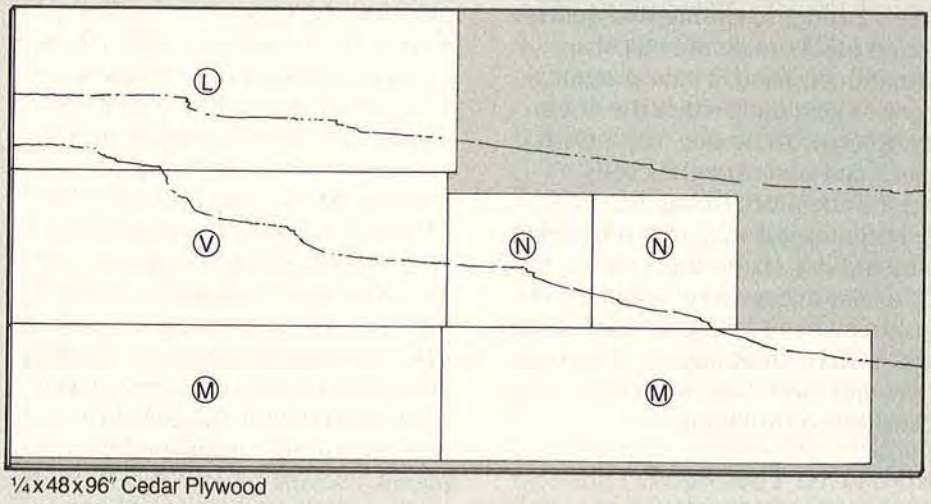
¾x9¼x96" Oak



¾x9¼x96" Oak



¼x48x96" Oak Plywood



¼x48x96" Cedar Plywood

Bill of Materials

Part	Finished Size *			Material	Qty.
	T	W	L		
A	¾"	5½"	44"	oak	2
B	¾"	2½"	44"	oak	2
C	¾"	2½"	18½"	oak	4
D	¾"	2¼"	12½"	oak	2
E	¾"	2⅛"	18½"	oak	4
F	¾"	2½"	14¼"	oak	2
G	¾"	5½"	14¼"	oak	2
H	¼"	13¼"	11½"	oak plywood	2
I	¼"	13½"	11½"	oak plywood	3
J	¼"	11½"	43"	oak plywood	1
K*	¼"	16 3/16"	45 15/16"	oak plywood	1
L*	¼"	16 3/16"	45 15/16"	cedar plywood	1
M	¼"	14"	45½"	cedar plywood	2
N	¼"	14"	15¼"	cedar plywood	2
O*	¼"	¼"	15¾"	oak	2
P*	¼"	¼"	45½"	oak	2
Q*	¾"	3"	48½"	oak	1
R*	¾"	3"	18"	oak	2
S*	1½"	1½"	18"	oak (laminated)	2
T*	1½"	1½"	48½"	oak (laminated)	1
U	¾"	1½"	46½"	oak	1
V*	¼"	16¾"	46½"	cedar plywood	1
W*	¼"	16¾"	46½"	oak plywood	1

*Parts marked with a * are cut larger initially, then trimmed to finish size. Please read the instructions before cutting.

Supplies: #8x1¼" flathead brass wood screws, 3 – ½x2½" brass butt hinges, ½" brads, stain, finish, #0000 steel wool, contact cement

Continued

9 Cut the side panels (H), the front panels (I), and the rear panel (J) to size from ¼" oak plywood.

10 To mark the veins on the front and side panels, first locate the vertical centerline on each panel. Next, mark lines 3⅛" apart on each side of the centerline. Now, set up a straightedge, and rout three ⅛" veins 1/16" deep in each panel (see the Buying Guide for details about the router bit we used).

11 Glue panels H, I, and J in the rabbeted openings in the framework. Remove any glue squeeze-out on the face of the panels with a damp rag immediately after clamping.

12 To fashion the bottom, cut the oak plywood (K) and cedar plywood (L) to size plus ½" on all sides. Then, laminate the two plywood pieces with contact cement. Finally, trim the laminated panel to finished size (16 3/16 x 45 15/16") with a table saw or with a circular saw and a straightedge. (We cut our laminated panel ⅛" shorter in length and width than the dadoed opening to allow for contraction of the framework.)

13 Dry-clamp the chest framework, making sure that the bottom (K, L) doesn't prevent the rabbeted corner joints from fitting snugly. Once the framework fits together correctly, glue and clamp it, checking for square and making sure that the top edges of the four frames are flush.

14 Scrape off the excess glue after it dries. Then, sand all surfaces smooth.

LINING THE CHEST

1 Cut the front and back lining pieces (M) to size from ¼" cedar plywood, keeping the grain direction horizontal. Then, check the fit of the pieces in the chest, but do not glue them in position yet. Cut the side liners (N) to size and dry-fit them, trimming if necessary.

2 Glue and brad the front and back liners in place, then the side liners.

3 Cap the top edge of the liner material with quarter-round molding (O, P). To make these pieces, cut a piece of ¾" oak 2" wide and 62" long (for safety's sake and ease of cutting the pieces on a table saw, we used a 2"-wide board). Rout a ¼" round-over on two edges where shown in Step 1 of the drawing at the top of the page. Then, follow Steps 2 and 3 to rip the two quarter-round pieces from the oak strip. The thin strips may have a tendency to kick back when the cut is completed. To be safe, use a push block and don't stand directly behind the piece being cut.

4 Miter-cut the side molding strips (O) and dry-clamp them above the ¼" cedar liners. Now, miter-cut the front and back strips (P) to fit. Glue and brad the molding strips in position, and sand them flush with the cedar-plywood lining.

ROUTING THE BASE AND LID MOLDINGS

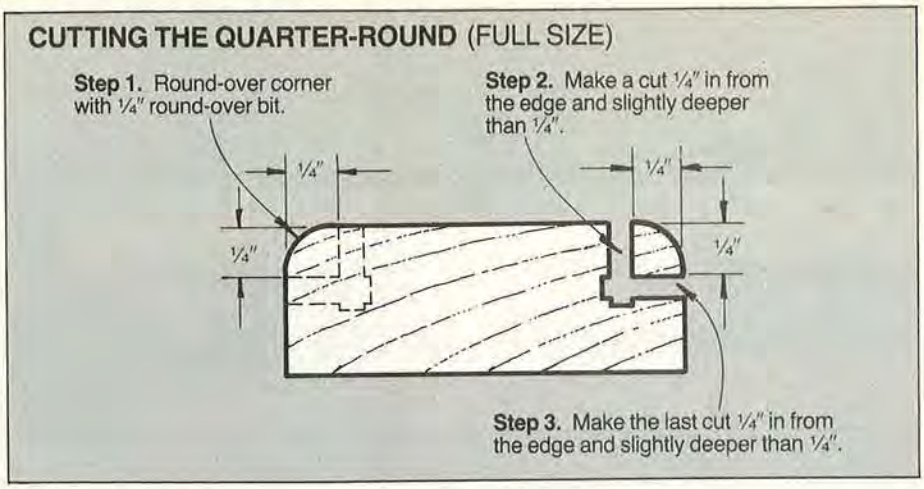
1 Cut the base molding pieces (Q, R) to size plus 2" in length.

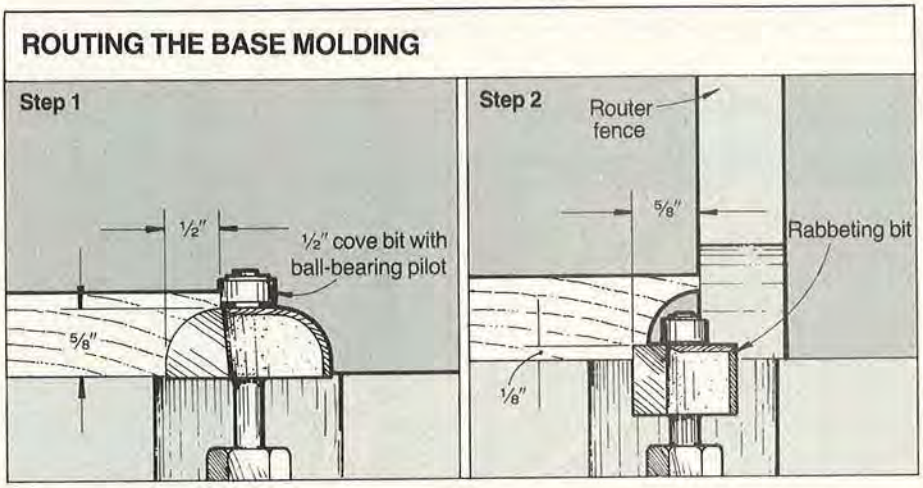
2 Follow the two-step procedure in the drawing, *above,* to rout the decorative contours on the three molding pieces.

3 Miter-cut both ends of the front piece and the front end of each side molding. Then, glue and clamp the pieces to the chest.

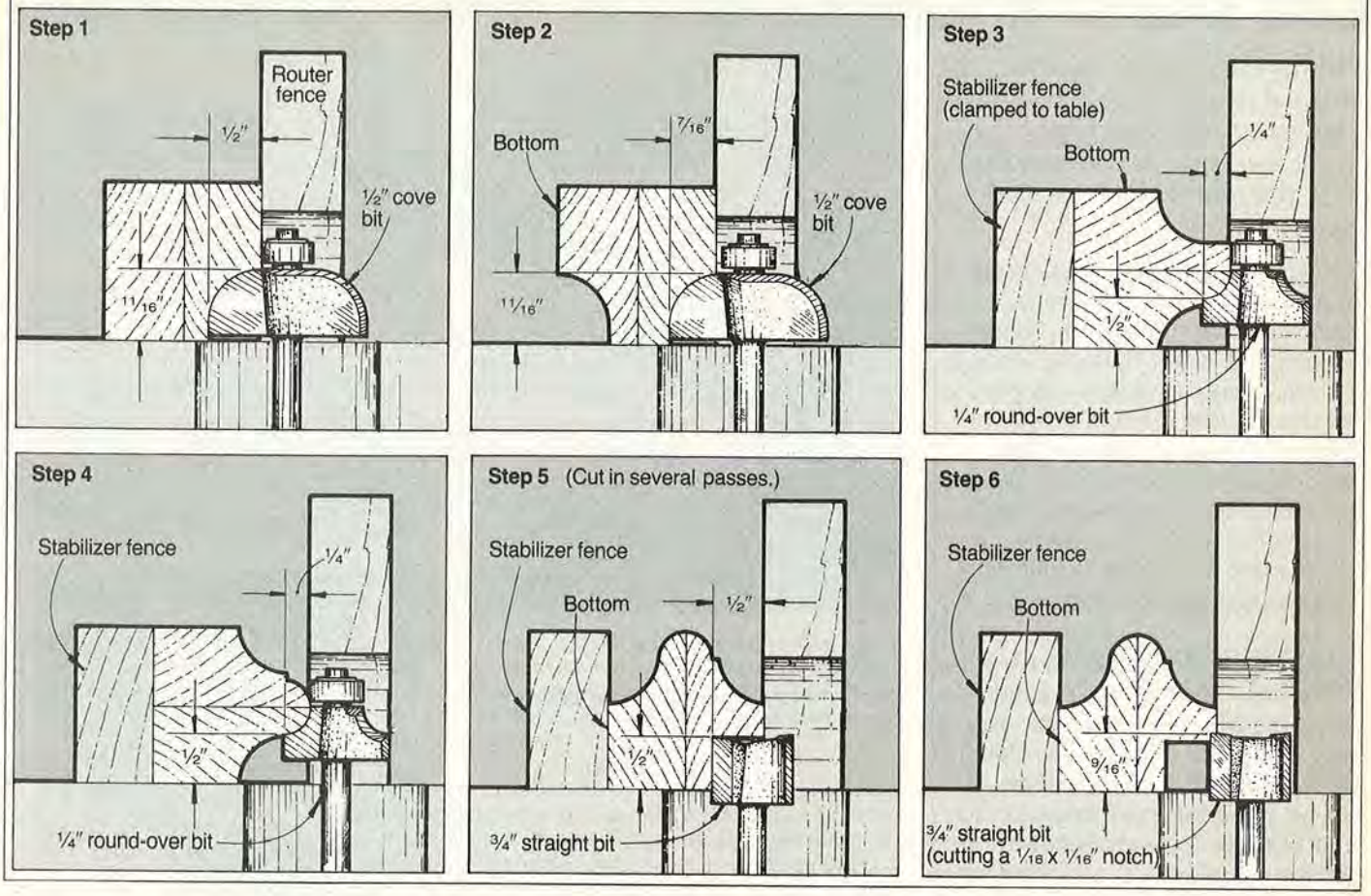
4 To form the lid molding, start by cutting four pieces of ¾" oak to 1¾x20" for the sides (S) and two pieces to 1¾x50" for the front (T). Laminate the four 20"-long pieces into two blocks that measure 1½x1¾x20". Do the same to the two 50"-long pieces. (We also formed a scrap lamination about 12" in length for making test cuts. Then, we positioned the router bits as shown, test-cut the scrap, and readjusted the bit as necessary before routing our finished pieces.) Scrape off any excess glue, and rip all three laminated pieces to 1½" finished width. Also, cut the lid's back trim piece (U) to finished size.

5 Follow steps 1 through 6 in the


CUTTING THE QUARTER-ROUND (FULL SIZE)
Step 1. Round-over corner with ¼" round-over bit.
Step 2. Make a cut ¼" in from the edge and slightly deeper than ¼".
¼"
¼"
¼"
¼"
Step 3. Make the last cut ¼" in from the edge and slightly deeper than ¼".



ROUTING THE LID MOLDING



series of drawings at the top of the page to rout the decorative molding (R, S). Now, go back and rout a ½" rabbet ½" deep along the top inside edge of the back trim piece (U), following the procedure in step 5 of the drawing.

6 Cut the lid pieces V and W to size plus ½" on all sides. Then, laminate the two pieces with contact cement, and trim the panel to finished size.

7 Glue and clamp the back trim piece to the laminated panel (V, W), keeping the ends flush.

8 Cut a ¾" rabbet ½" deep in the back end of each side molding piece (S) where shown in the Lid-Corner Detail in the Exploded View Drawing, *page 48*.

9 Miter-cut the side molding pieces (S) and front molding piece (T) to length. Now, glue and clamp them to the lid assembly, being careful not to mar the routed edge. (When clamping, we used scrap spacers with the clamps for uniform pressure and to prevent marring the oak veneer plywood.)

FINAL CONSTRUCTION AND FINISHING

1 Mortise the back rail (B) and back trim piece (U) for the hinges. Note that the middle hinge is centered and the other two are positioned 4" in from each end.

2 Sand the entire chest smooth, especially the cedar lining, which will remain unfinished. Using masking tape and newspaper, mask the lining, and apply the finish of your choice. (We stained our chest first, then applied several coats of polyurethane, using steel wool between coats.) Finally, remove the masking tape and newspaper.

3 Install the hinges. Then, attach the lid support (see the Buying Guide) and spacer block where shown in the photo, *page 46*, and in the Side-Section Drawing, *page 48*.

Note: *Cedar slowly loses its aroma over time. Revive the fragrance by lightly sanding with 220-grit sandpaper. You can also plane a solid piece of cedar, put the shavings in a nylon or sock, and place it in the chest for use as a pomander.*

BUYING GUIDE

- ***Router bit.*** ⅛" high-speed steel veining bit fortified with chrome-plated steel. Catalog no. 9HT2559, $2.69. To order, call your local Sears store.
- ***Counterbalanced lid support.*** Rugged, heavy-gauge housing. Catalog no. D1512, $3.35 each. The Woodworker's Store, 21801 Industrial Blvd., Rogers, MN 55374. Phone 612/428-2199 to order.

Produced by: Marlen Kemmet
Project Design: James R. Downing
Photographs: Jim Kascoutas
Illustrations: Randall Foshee; Bill Zaun

DUST-BUSTIN' DRUM-SANDING TABLE

Print this article

Whether you sand curves without the fence or edge-sand with the fence, you'll find our drum-sanding table pleasurably clean and easy to use.

This dust-collecting drum-sanding table not only keeps your shop cleaner, the offset fence allows you to edge-sand stock. With the fence in place, simply feed stock slowly into the rotating sanding drum mounted in your drill press. The slight offset we designed into the fence lets you edge-sand stock to 1/32" precision. (P.S. Removable inserts make switching to different-sized sanding drums a snap.)

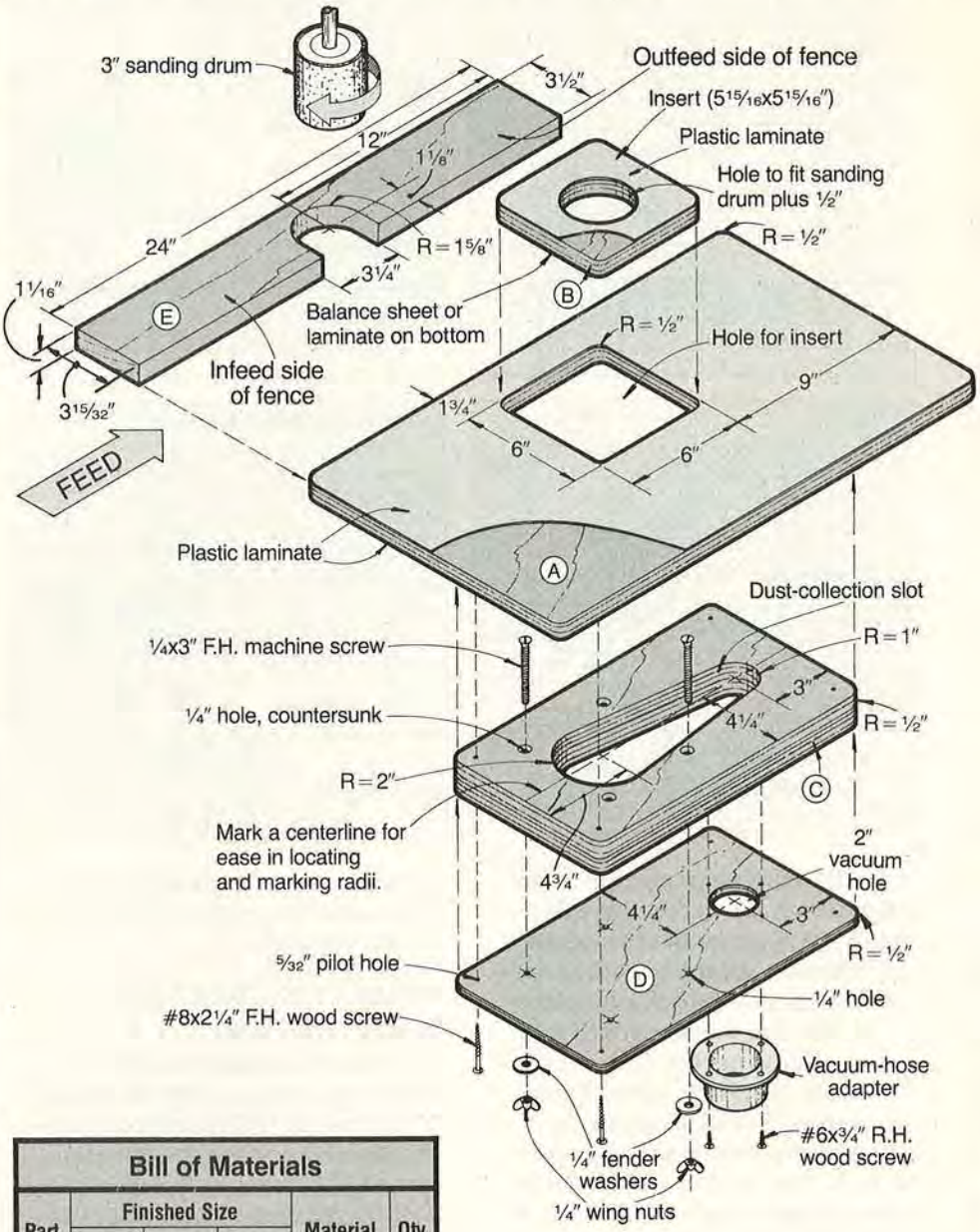
CONSTRUCTING THE SANDING TABLE

1 Cut the tabletop (A) to size as listed in the Bill of Materials. Mark the corner radii with a compass, and cut the corners to shape. Sand, but don't round-over, the tabletop edges.

2 Cut two pieces of plastic laminate to cover the top and bottom of the tabletop, allowing 1" in both directions for overlap. Apply the laminate to the top of the tabletop with contact cement. Using a router with a flush-trim bit, rout the laminate flush. Repeat this procedure with the laminate on the bottom of the tabletop.

3 Mark the location of the square insert hole on the tabletop where shown in the Exploded-View Drawing. Drill a 1" hole inside the outline in each corner, and cut the insert hole to shape with a jigsaw or scroll saw. File the sides of the hole straight if necessary.

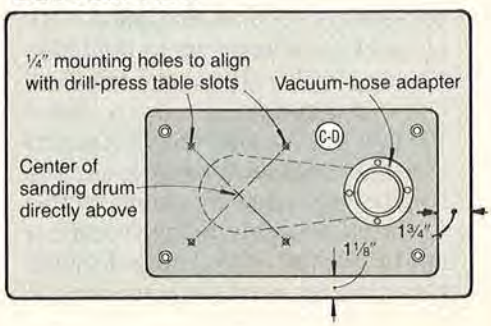
4 Cut the table inserts (B) to size. (We cut a separate insert with a hole to match each different-sized sanding drum.) Apply laminate to the top and bottom of each insert; rout any overlap flush with the

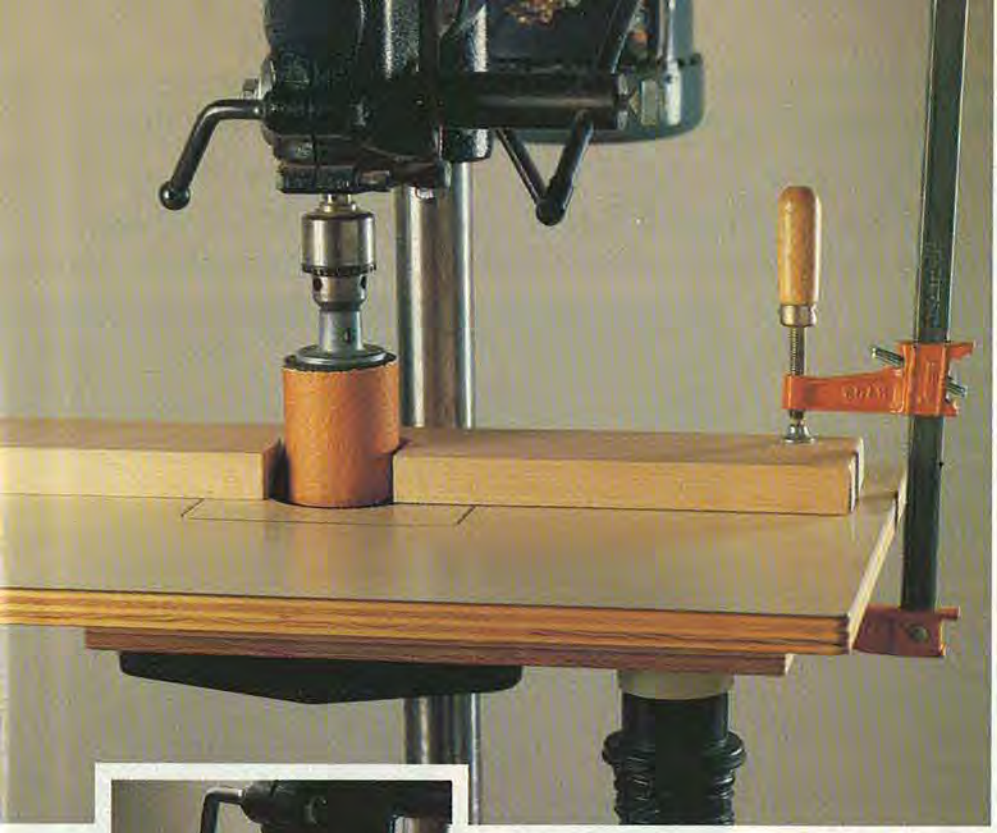


Bill of Materials					
Part	Finished Size			Material	Qty.
	T	W	L		
A	¾"	14½"	24"	plywood	1
B	¾"	5 15/16"	5 15/16"	plywood	2
C	¾"	8½"	15"	plywood	2
D	¼"	8½"	15"	plywood	1
E	1 1/16"	3½"	24"	maple	1

Supplies: #6x¾" roundhead wood screws, #8x2¼" flathead wood screws, 4 — ¼x3" flathead machine screws with fender washers and wing nuts (fender washers are wider than regular washers), plastic laminate, contact cement, polyurethane

BOTTOM VIEW





Above. **When you want to edge-sand with precision, start by bolting the table to the drill press. Then clamp the fence into position as shown in the photo, and attach a vacuum hose to the adapter.**

Left. **In this photo, you can see how we removed the drum-sanding insert for a better view of the dust-collection slot beneath it. Various inserts, each with a different-sized hole, will accommodate a range of drum-sander sizes.**

edges of the inserts. Sand the corners and edges so that the inserts fit snugly inside the tabletop cutout.

5 In the center of each insert, cut a hole ½" larger in diameter than the diameter of the sanding drums you plan to use.

MAKING AND ATTACHING THE SUBTABLE ASSEMBLY

1 Cut two pieces of ¾" plywood to size for the subtable (C). Glue and clamp the pieces together with the edges flush. When the glue dries, cut the corners to shape and sand the edges smooth.

2 Mark a centerline down the length of the subtable where shown in the Exploded-View Drawing. Use the centerline and other dimensions given to lay out the shape of the dust-collection slot. Then, drill a ⅜" hole through the subtable to start the blade, and cut the slot to shape with a jigsaw.

3 Cut the bottom panel (D) to size from ¼" plywood. Mark the location of the 2" vacuum hole and cut it out with a circle cutter, or cut it to shape with a jigsaw.

4 With the tabletop facedown, position the subtable and the bottom panel over the hole for the inserts, and dry-clamp them in place. Drill and countersink a 5/32" pilot hole in each corner of the assembly, drilling completely through the subtable and bottom panel, and ¼" into the tabletop. Fasten the pieces together with four #8x2¼" wood screws (do not use glue, as you need to be able to remove the tabletop from the subtable for ease of access when drilling the mounting screw holes later).

MOUNTING THE TABLE TO YOUR DRILL PRESS

NOTE: *Mounting-hole locations may vary for your particular drill press. Try to position the holes inside the square cutout for easier access to the mounting screws.*

1 Center your drill-press table under the drill-press spindle.

2 Set the sanding-table assembly on your drill-press table. Chuck a sanding drum in the drill press, and align the sanding table to center the sanding drum in the insert hole.

3 Clamp the sanding table to your drill-press table, and mark the location of the slots in the drill-press table on the bottom of D.

4 Remove the sanding table from the drill press. Remove the screws and separate the tabletop from the subtable and bottom panel assembly. With the subtable and bottom panel still screwed together, use a drill press and a ¼" bit to drill four mounting-bolt holes where marked on the bottom of the panel. Flip the assembly faceup and countersink the ¼" holes. Insert a ¼x3" machine screw in each hole, and reassemble the entire table assembly.

5 Position the sanding table over the drill-press table. Fasten the sanding table to the drill-press table with machine screws, washers, and wing nuts.

MAKING THE FENCE AND FINAL ASSEMBLY

1 From 1 1/16"-thick maple, cut the sanding fence (E) to 3½x24". Mark and cut the sanding-drum hole where dimensioned in the Exploded-View Drawing. Using a table saw, rip the infeed side to 3 15/32". (For safety's sake rip only as far as the drum-sander hole, then turn the saw off, rather than trying to back the piece out with the saw running.)

2 Apply polyurethane to the exposed wood surfaces, and attach the vacuum-hose adapter to the table.

Continued on page 81

READERS, IT'S YOUR TURN! PROJECT

An anything-but-everyday hand plane, a carving-adorned shelf, a pair of painstakingly handmade boxes, and a childhood dream come true — all once again demonstrate our readers' creativity in working with wood. See for yourself!

A FANCIFUL BALANCING ACT

Herb Mitchell, 60
Big Bear Lake, California
Architectural designer, woodcarver

"Part of carving's appeal," Herb says, "is that no two pieces ever come out the same." Yet, in order for his carved rocking horse to balance, each pair of legs had to be equal in dimension as well as equidistant across the rocker stretchers. For maximum precision, Herb cut the legs out of fir on the band saw, then rounded them off by carving.

A 3′-diameter fir log Herb dragged from the forest yielded the head and body, which he first roughed out with a chain saw. Herb attached the tail and legs to the body with dowels and glue. For strength, stability, and to prevent splitting, he made the rockers and struts by laminating oak and fir. Herb points out that soft ears have more than decorative value: They prove safer for rambunctious young riders. For contrast, Herb used three shades of Watco stain. Then he coated it with tung oil.

Young bronco busters are sure to love your horse, Herb.

DOVETAIL DELIGHTS

Jeff Overright, 29
Elkhart, Indiana
Architectural draftsman

With a friend's cabinet shop at his disposal, Jeff could have built this pair of handsome storage cases with power tools. But he chose to make them almost entirely by hand.

Jeff worked with lucky finds from his friend's scrapwood box — some plain walnut and a piece with swirl around a knot. The size of the swirl pattern dictated the first dimension of his boxes, the tops. He could cut two 8″ lengths from the figured board, and 5″ widths — a pleasing proportion to the eye.

To make the dovetail joints on the corners, Jeff first marked them on the wood using a template. With an ordinary utility knife, he then "cut, chipped, and chiseled" until he convinced them to interlock snugly. Jeff rabbeted the tops and top edges of the boxes for a tight fit, and hand-rubbed tung oil for a finish.

You sure could have made the job easier, Jeff, but we doubt that your boxes could be more attractive. We hope you learned a lot from the handwork!

Print this article

SHOWCASE

NO PLAIN PLANE

Gregg Lehman, 24
Reseda, California
Industrial design student

Gregg's first-semester assignment in industrial design school was to make a tool, real or imaginary. As a person who finds satisfaction in working with his hands, and as a collector of woodworking tools, Gregg decided to build a scrub plane. It fit the "real" category because a scrub plane removes wood quickly from rough lumber. But this one isn't a replica: Gregg originated the design.

From the school's scrap lumber pile, Gregg chose some stunning woods. For the stock, he selected rosewood, finger-jointed with the oak on the sole. The handle is cherry, capped with rosewood. And the plane iron nestles between oak and walnut. With the help of a finger-jointing jig and a miter gauge, Gregg made all the joinery cuts on a table saw. For a finish that shows off the wood yet stands up to use, he wiped on tung oil mixed with polyurethane. A lucky friend is the owner of Gregg's plane now.

AN HEIRLOOM FROM THE HOMESTEAD

JoAnnette Sieve, 48
Parker, Colorado
Free-lance writer and commercial artist

If her house needs a shelf or her dairy goats need a feeding trough, JoAnnette doesn't wait for her husband. For her, woodworking happens to be a homesteading skill as well as an artistic, creative craft.

JoAnnette even handles the big jobs: She and her husband built a barn and a mountain cabin — without power tools. But her real pleasure comes in pulling off her carpenter's apron, donning her thinking cap as a woodworker, and making presents for her family.

"When you're working with wood, you never know if you're creating a family heirloom," she says of the pine shelves she gave as Christmas gifts.

In first designing this shelf unit, JoAnnette thought the shelf itself would be of glass, then changed her mind. That's why the supports cradle the shelf as they do.

After cutting all the shelf pieces on a band saw, JoAnnette assembled them using simple butt joints anchored with glue and screws. To personalize each unit, she either carved a motif with a gouge, as shown, or applied a band saw cutout.

To this woodworker, finishing starts at the lumberyard with the clearest, straightest-grained pine. JoAnnette then used oak stain and satin varnish.

To submit your projects...
Send a 35-mm color slide (no prints, please), with the project as the focal point and a simple background -- no people. Include a capsule description — materials, special joinery, finish, and dimensions, for example. *WOOD* will pay $25 for published projects. Slides cannot be returned unless you enclose a self-addressed, stamped envelope.

Project Showcase
Better Homes & Gardens®
***WOOD* Magazine**
Locust at 17th, Des Moines, IA 50336

MILL IT **YOUR** WAY WITH A THICKNESSING MACHINE

Need some stock milled to exact thickness for your next project? You can do it, plus a whole lot more, with a thicknesser in your shop.

Print this article

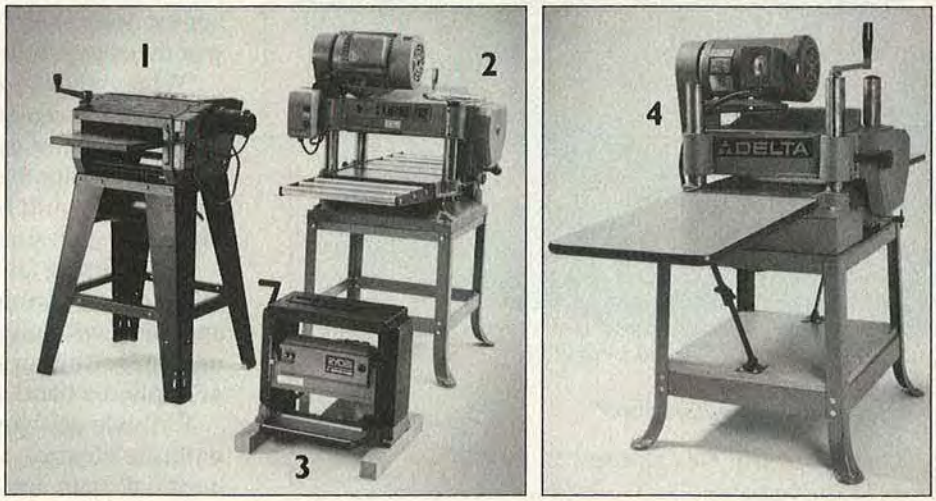
Pictured above: Shopsmith 555082

If you're someone who thinks you can get along fine without a thicknesser — this article may just change your mind.

Sure, these workshop powerhouses, which also are known as thickness planers and simply as planers, don't come cheap. But, boy, do they work hard!

Some of these tools even have the capability of letting you joint, mold, mortise, saw, and shape stock to exact size. And if you've ever dreamed of milling rough stock into project lumber, here's the ticket.

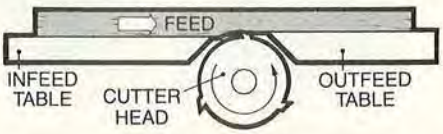
Simple thicknessers



WHY A JOINTER IS *NOT* A THICKNESSER

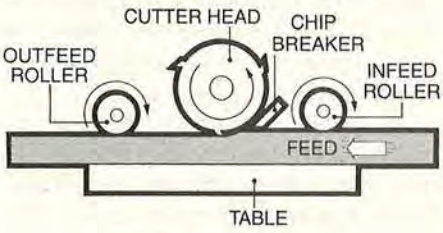
Many folks confuse these two machines because of similar appearance and operation. However, they differ in several respects.

- A **jointer** has a cutter head below the infeed and outfeed tables. At the peak of its rotation, each



JOINTER

blade comes exactly in line with the outfeed table. You achieve a given depth of cut by lowering the infeed table below the height of the outfeed table. The advantage of a jointer, when properly adjusted, lies in straightening crooked lumber. You can machine rough, cupped, curved, or twisted boards to yield one perfectly even, finished side and one good edge. But to complete the job and obtain the precise, uniform thickness you want, you need a thicknessing machine.



THICKNESSER

- The first thing you notice about a **thicknesser** compared to a jointer is that the cutter head is above, rather than below, the feed tables. A thicknesser's knives exert massive uplifting force on a board as it glides between the table and the blades. It's the job of the power-feed mechanism to safely pull lumber below the cutter head, while the chip breaker prevents the knives from tearing the grain. Extreme downward pressure from the rollers presses out any cup, warp, or twist under the cutter head. The result: a finished board of exact, uniform thickness (although the distortion in shape may reappear after you remove the rollers).

THREE WAYS TO GO

The first thing we learned in our research is that the term "thicknesser" covers a lot of territory! The machines we tried out in the *WOOD* Shop fell into three basic categories: simple thicknessers, jointer-thicknessers, and molder-thicknessers. There are *lots* of thicknessing machines — too many to do justice to in one article. That's why we decided to stay under $1,800, which should be within the means of most home woodworkers.

Thicknessers: The basic tool

Simple thicknessers reduce lumber to size and leave it with a finished surface. This category includes only a few small machines, but almost all of the commercial-size behemoths. Pictured: (1) Shopsmith 555082, also shown in opening photo; (2) Grizzly G1021; (3) the lightweight, portable "Plane Jane" Ryobi AP-10; and (4) Delta RC-33, which pioneered commercial-quality construction at moderate cost.

2-in-1 jointer-thicknessers

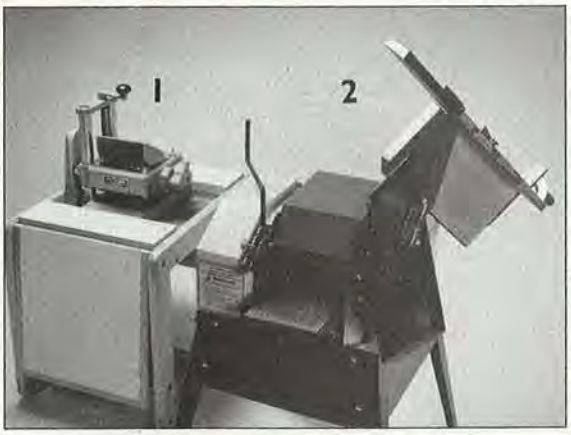
This convertible tool lets you salvage most of those forgotten boards that tend to twist into pretzels in the corner of the shop. With jointing capacity to match thicknessing capacity, you can eliminate cupping and twisting with one tool. Simply lift off or swing away the jointer on top assembly to use the thicknesser below. Pictured: (1) Emco Maier Rex 2000; (2) Elektra Beckum HC 260ESH; and (3) DeWalt 3590.

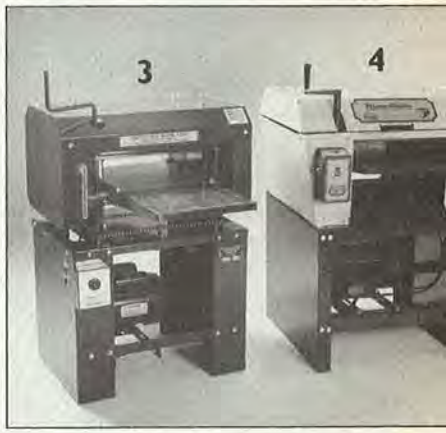
Molder-thicknessers: Fancy!

By going this route, you can thickness boards to exact dimension and make moldings of almost any pattern. Powerful 3- to 5-hp. motors are standard with the 12″ versions. With such power, even full-width cuts as deep as 5/16″ won't cause stalling. Pictured: (1) Williams & Hussey 7″ (with our shop-made stand); (2) Foley Belsaw 8″ (jointer tables up); (3) Woodmaster 12″; and (4) Foley Belsaw 12″.

Jointer-thicknessers

Molder-thicknessers





Continued

THICKNESSING MACHINES

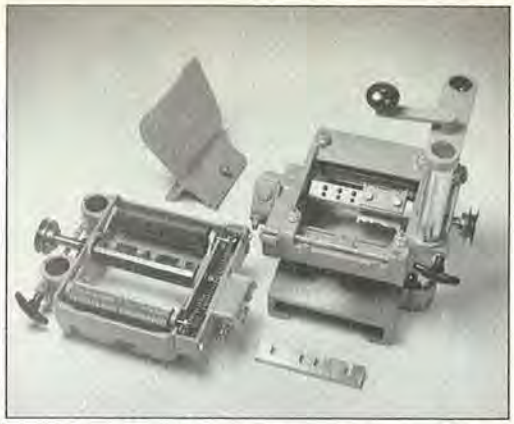
THE CUTTER HEAD: HEART OF THE THICKNESSER

Make no mistake — power planing with a rotary-knife head can never give the smooth results of a stationary blade pushed across the same surface. Yet hand-planing takes a lot of time and skill to surpass what a power planer can deliver in just seconds or minutes.

The revolving cutter head makes hundreds of short, slightly dished scoops in a board. The number of these cuts per inch and the accuracy with which you set the blades determine how smooth the resulting surface will be.

Smaller thicknessers have either two- or three-knife cutter heads. Two-knife heads rotate at higher speeds than three-knife heads to achieve the same number of cuts per inch, which determines how many mill marks will remain.

We found that the cut made by some of the machines we tried, even straight from the crate, was so satiny that we couldn't spot any mill marks without a magnifier. When you do find telltale mill marks, the problem probably lies in misaligned knives. It's extremely important to set the knives at exactly the same height above the cutter head and at the correct angle.



Williams & Hussey uses a steel cutter head with a blade-setting lip milled at the bottom edge for setting both thicknessing and molding knives. The view from the bottom (at left in photo) shows the serrated steel infeed and rubber outfeed rollers.

FEED SYSTEMS THAT KEEP STOCK MOVING

Power-feed systems on thicknessers consist of infeed and outfeed rollers mounted just in front of and behind the cutter head. Some machines, such as Makita, Hitachi, Parks, Delta, and Grizzly, have idler bed rollers mounted in slots in the thicknessing bed beneath the upper power rollers. These rollers reduce friction as the wood moves across the bed. Other machines require a good bed waxing from time to time.

Feed rollers are either steel or molded rubber. Which is best? Opinions vary widely. Serrated steel infeed rollers grip the wood firmly and feed it through with little slippage, as long as you cut deep enough to eliminate the indentations. You can usually count on steel rollers to last the life of the machine with no maintenance other than cleaning.

Rubber rollers, on the other hand, leave no nicks or cuts and allow you to simply "skim" a surface because they leave no grip marks. Although we don't consider it a major problem, rubber rollers do tend to wear faster and slip more easily. A new roller costs only about $10 and takes only 10 minutes to change on most machines.

When it comes to outfeed rollers, the choice is either smooth steel, steel with very fine serrations or knurls, or rubber. Some machines, such as the Williams & Hussey and Shopsmith models, use rubber outfeeds with steel infeed rollers to avoid marring. Molder-thicknessers require rubber outfeeds to prevent damaging delicate cuts.

No matter what type of rollers you choose, keep them clean and the table waxed. Denatured alcohol does not damage rubber rollers and leaves no residue as it dissolves built-up wood pitch — the biggest cause of roller slippage and bed-sticking.

SPEED CONTROL: WE REALLY LIKE VARIABLE FEED

In any thicknesser, the cutter head spins in one direction and the feed rollers revolve slowly in the other. Reversing and slowing the rollers requires a gearing, belt, or chain-and-sprocket system powered from the head or a different motor.

Only two tools (Shopsmith and Woodmaster) that we know of feature variable speeds with electronic dial controls. They accomplish this by using separate gear motors that operate the power-feed system independently. With this approach, the head motor can direct all its power into moving the cutters.

Other machines with more than one speed have interchangeable belts or sprockets. All of these offer only two speeds, and, except for the Inca, they must be stopped to change speeds.

Variable-speed machines offer a key advantage: You can slow the feed to a crawl right in the middle of a pass if you hit trouble. If you've ever had a "blowout" while thicknessing, you know what a great feature this is! Variable feed won't prevent blowouts entirely, but it does give you added control of the situation.

Small, separate gear motors with electronic controls make the Shopsmith (shown) and Woodmaster the only machines with variable feed.

MOTORS AND CONTROLS: SAFETY FIRST!

All thicknessers use standard induction motors, except for the Japanese Makita, Ryobi, and Hitachi models (these use universal motors). And most thicknesser motors are totally enclose fan cooled (TEFC).

Because thicknessers spew out a steady stream of fine dust, large chips, and shavings, most open motors, whether universal or induction, invite trouble. If the motor on your machine is open, blow it out frequently with an air gun.

Take special note of Ryobi's universal, high-speed motor. (It sounds like a large router when you crank it up.) Unitary design — with the motor, gear, head, and drive assembly all in one — contributes to the incredible compactness of this machine.

When it comes to controls, good placement isn't just handy, it's essential for safety. If you have to reach too low or across or around the work, you risk getting in the way of a kickback.

Controls on the Foley Belsaw, Sears, and Shopsmith models incorporate a key system that lets you lock the machine in the "off" position. Foley Belsaw also is the only company that uses safety interlocks: Open the hood while the machine is running and the motor immediately shuts down. Other machines, such as the Elektra Beckum, have magnetic starters. With these devices, the machine will not automatically start again after a power failure or after unplugging.

WHAT THEY'RE MADE OF

Cast-iron machines

Delta, Grizzly, and Williams & Hussey all have cast-iron head/power drive assemblies and bed parts with tubular steel supports that connect the bed and head assemblies. The Delta and Williams & Hussey use a stationary bed and move the head assembly up and down the tubular columns. This makes setting up auxiliary support tables a snap. But in the case of the Delta, which has the motor atop the head assembly, it's a little awkward.

Although the Grizzly 15″ machine looks very much like the Delta 13″, the designers of the Grizzly attached the head and motor assembly to the columns, added a fixed base, and opted to move the table up and down on the screws.

A single-side support system makes the Williams & Hussey unique. Like the Delta, it has a fixed table and movable head, with the motor either in front of or beneath the machine. This open-sided design lets you run pieces as wide as you can support. The 7″ knives can, in theory, plane a board up to 14″ wide. But the best use is in the molding mode, which permits you to cut molded edges on large pieces. This machine is quite small, but the cast iron and heavy tube design makes it 80 lbs. without motor or stand.

Cast-aluminum models

Elektra Beckum and Inca provide excellent examples of the quality attainable in cast-aluminum tools. By using heavily ribbed pieces in the beds and body sides, these tools will deliver years of reliable service.

By the way, the dark-colored jointer beds on these tools stem from a chemical reaction during the anodizing process used for hardening. After repeated use, the color appears to wear off, when actually the tool is being polished by the friction of lumber passing across it.

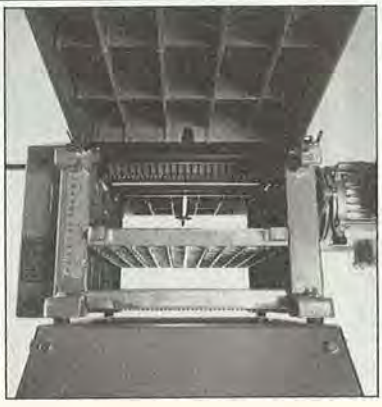
The DeWalt and Shopsmith models combine aluminum and iron castings for lightweight durability. Both machines have cast-iron thicknessing tables and cast-aluminum body and base parts. The DeWalt, a jointer-thicknesser, has cast-aluminum jointer tables. The Shopsmith thicknesser, by combining both materials, makes a highly compact 12″ planer with the longest thicknesser bed (28″) for extra support.

Note: Adequate support for the ends of long pieces is *essential* with these machines. Use auxiliary roller supports on all big pieces!

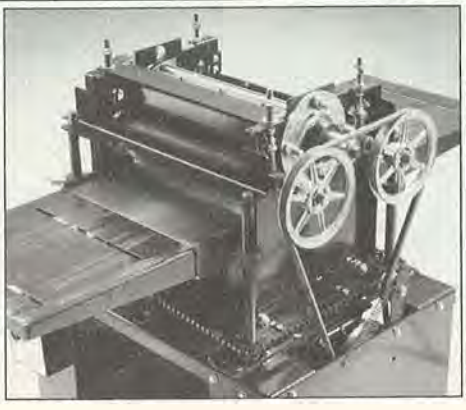
Sheet-steel tools

Foley Belsaw, RBI, and Woodmaster use cast-iron bed tables and sheet steel body parts. Emco and the Foley-Belsaw 8″ opt for heavy-gauge sheet steel, even on the beds for thicknessing and jointing operations.

We found that all these tools ran smoothly with little vibration and accurate results. Even when we took a 5/16″ bite from a 7″-wide piece of red oak on the Woodmaster at full speed, we experienced no vibration or chatter. This design allows for good quality at lower cost.



This Elektra-Beckum and other cast-aluminum tools use heavily ribbed castings to maintain perfect form, as this view inside the machine shows.



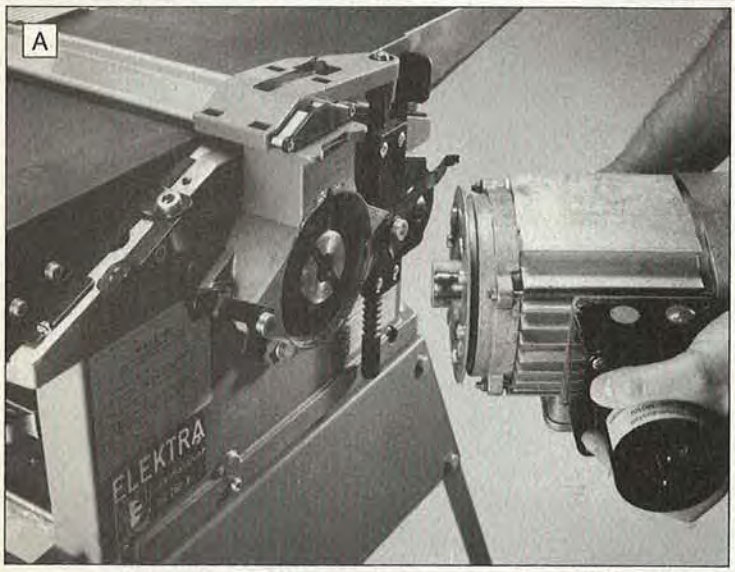
The Woodmaster 712 is typical of sheet-metal models. Note the continuous chain and threaded-rod bed adjustment.

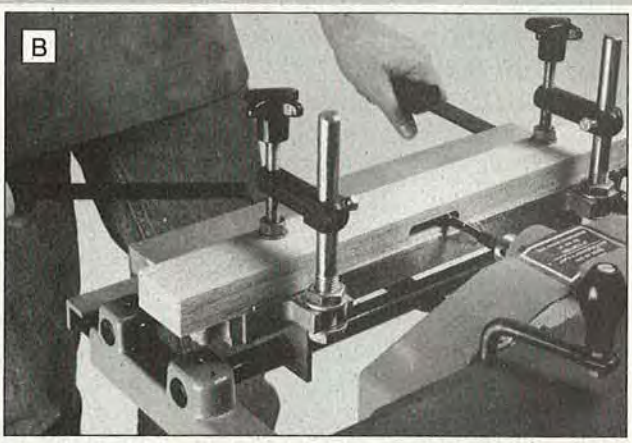
Continued

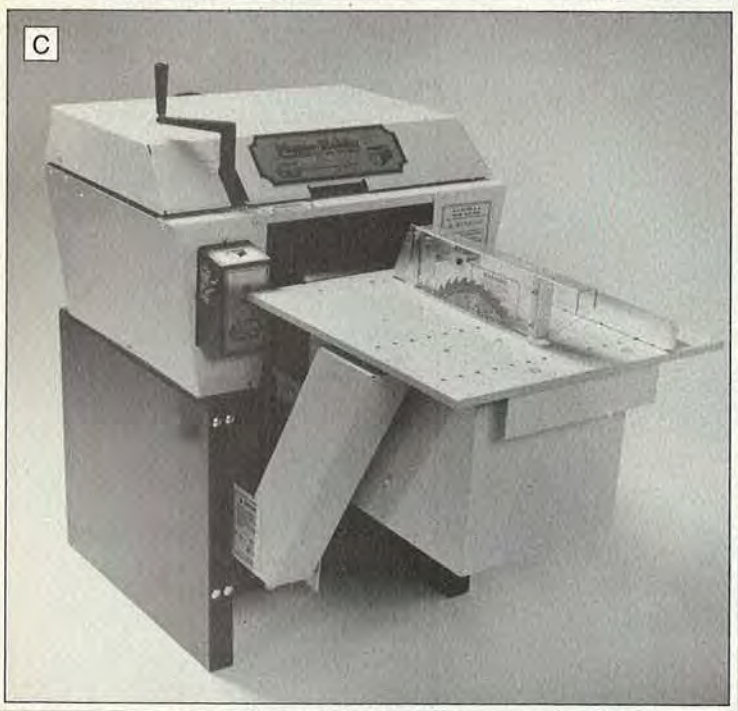
THICKNESSING MACHINES

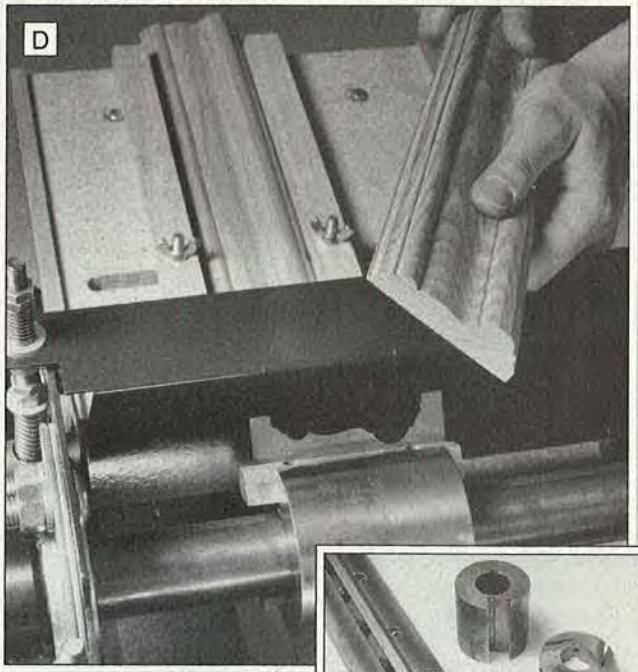
DON'T OVERLOOK THESE SPECIAL FEATURES

A) Elektra Beckum has built a family of tools — jointer/thicknesser, 12½" band saw, and spindle shaper — around its "Unimex" system. Instead of a stationary power supply, Elektra opted for stationary tools and a lever-lock motor mount. Slip the motor and controls from machine to machine in seconds. (You save $225 per machine on the second and third in the set.)
B) DeWalt, Elektra Beckum, and Emco models all have mortising attachments that run off the power train of the thicknesser. These make some highly versatile joinery machines. The Emco offers other attachments, too, including a table saw and spindle shaper, all of which attach in just minutes.
C) The rip-saw attachment for the 12" Foley Belsaw thicknesser is unique. This device evolved naturally because the main tool complements Foley Belsaw's one-man sawmill. It's rather bulky, but you'll find the power-feed saw useful if you need to rip and plane many narrow strips for, say, cabinet facings or butcher block.
D) We wanted to give you a close-up view of the distinctive moldings you can make after just a few minutes' adjustments on a thicknesser like this Woodmaster 712.
E) RBI and Woodmaster machines offer interchangeable heads for molding and drum-sanding. This makes setting the molding knives shown here fairly simple — you don't have to reset the planing knives when you're finished.









VITAL STATISTICS — THICKNESSING MACHINES

MANUFACTURER	MODEL NUMBER	AMPS	POWER TRAIN: VOLTS	POWER TRAIN: HORSEPOWER	POWER TRAIN: POWER DRIVE[1]	POWER TRAIN: NO. OF SPEEDS	POWER TRAIN: HEAD SPEED (RPM)	POWER TRAIN: FEED RATE (FT. PER MIN.)	CUTTER HEAD[2,3]: CUTS PER INCH	CUTTER HEAD[2,3]: NO. OF KNIVES	CUTTER HEAD[2,3]: GIB TYPE[4]	CUTTER HEAD[2,3]: (J)ACKS/(S)PRINGS	CUTTER HEAD[2,3]: INFEED[7]	CUTTER HEAD[2,3]: OUTFEED[7]	FEED SYSTEM: MAX. CUT	FEED SYSTEM: THICKNESS CAPACITY (W x H - IN.)	FEED SYSTEM: MOLDING (Y,N)	FEED SYSTEM: JOINTER CAPACITY (W - IN.)	ACCESSORIES[5]: STANDARD	ACCESSORIES[5]: OPTIONAL	MATERIALS[6]: FRAME	MATERIALS[6]: THICKNESS BED	MATERIALS[6]: JOINTER BEDS	MATERIALS[6]: BASE	WEIGHT (LBS.)	SUGGESTED PRICE
Delta	22-651 RC-33	12	220	2	G,B,C	1	4,500	15.5	73	3	P	S	S	S	3/16	13x5.9	N	N	B,C	A,D	T4	I	—	S	295	$1,740
DeWalt	3590	9.5	220	2	B,C	2	6,800	29/36	39/31.5	2	P	J	R	R	1/8	10¼x6	N	10¼	B,E	A,C,F	A	I	A	A		$1,250
Elektra Beckum	HC260ESH	13	220	2.4	G,B,C	1	7,200	19	63	2	P	J	S	S	1/8	10¼x6⅜	N	10¼	A,B,D,E	F	A	A[11]	A[12]	—	125	$1,250
Elektra Beckum	HC260M	20	110	2.4	G,B,C	1	6,000	16	63	2	P	J	S	S	1/8	10¼x6⅜	N	10¼	A,B,D,E	F	A	A[11]	A[12]	—	124	$1,295
Elektra Beckum	HC260K	16	220	4.2	G,B,C	1	10,200	27	63	2	P	J	S	S	1/8	10¼x6⅜	N	10¼	A,B,D,E	F	A	A[11]	A[12]	—	190	$1,375
Emco Maier[13]	Rex 2000	16.5	110	2.5	B,G,C	1	6,000	16.5	61	2	B	—	S	S	1/8	10¼x6	N	10¼	A,B,C,E	D,F	S	S	S	S	145	$1,045
Foley Belsaw[8]	985	23	220	5	B,C	2	4,500	12/20	94/56	3	W	J	R	R	3/16	12⅜x6¼	Y	N	A,B	C,D,H	S	I	—	S	382	$1,399
Foley Belsaw[8]	684	13.6	115	1	B,C	1	6,000	28	36	2	W	J	R	R	5/32	8x4½	Y	6½	A,B,E	C,D	S	S	S	S	234	$ 799
Grizzly[9]	G1021	10	220	2	B,G,C	1	4,333	11.5	94	3	P	S	S	S	1/8	15x6	N	N	B,C,D,G	A	T4	I	—	I	530	$ 795
Hitachi	P100F	15	115	2.7(max)	B,G,C	1	10,400	26	67	2	B	—	R	R	1/8	12x5/32x6⅝	N	N	B,C	D	T4	I	—	I	256	$1,605
Kity	636	10	110	1.5	B,C	2	7,400	19/24	65/51	2	W	S	S	S	3/16	10¼x6	N	10¼	E	A,B,C,D	S	S	A	S	88	$1,019 w/o mtr.
Parks	98	12	230	2	B,G	1	4,000	16	75	3	P	J	S	S	1/8	12x4	N	N	B	A,C,D	I	I	—	A	280	$1,350
RBI	612	10	220	3	B	2	4,200	12/33	94/32	3	W	J	R	R	3/16	12¼x6½	Y	7	A,B,G	C,D,E,H	S	I	S	S	289	$1,249
RBI	408	20	115	1.5	B	1	4,200	22	50	3	W	J	R	R	3/32	8x4.25	Y	7	A,B,G	C,D,E,H	S	I	S	S	160	$ 799
Ryobi	AP 10	13	120	2	B,C,G	1	8,000	26	51	2	B	—	R	R	1/8	10x5	N	N	B,C	—	S	A[11]	—	A	58	$ 689
Shopsmith	555082	15	110	1.75	B	V	5,750	7-20	72-205	3	W	J	S	R	1/8	12x4	N	N	A,B,C	D	A	I	—	—	151	$ 899
Williams & Hussey[10]	W-7-S	15	115	1.5	B,G,C	1	7,000	15	78	2	B	—	S	R	¼	7x8¼	Y	N		A,B,D	T2	I	—	—	85	$ 740
Woodmaster	712	22	220	5	B	V	4,200	0-16	70-1,000	3	P	J	R	R	3/16	12¼x6¾	Y	Y	A,B,C,G	D,E,H	S	I	S	S	350	$1,400

1 – (G)ear (B)elt (C)hain

2 – All use solid ⅛" high-speed steel knives, except Williams & Hussey, which uses ¼" knives through-bolted to head

3 – Elektra Beckum offers optional two-edged disposable knives.

4 – (W)edge (P)inch (B)olt-through

5 – (A) Stand
(B) Motor
(C) Knife-setting gauge
(D) Dust-collection hood
(E) Jointer system
(F) Mortising system
(G) Extension tables
(H) Surface sanding

6 – (S)heet steel
(A)luminum Alloy Cast
(I)ron Cast
(T2)ubular steel — 2 posts
(T4)ubular steel — 4 posts

7 – (R)ubber (S)teel

8 – Sears specifications same as Foley Belsaw.

9 – Total Shop, Sunhill and Wilke offer a similar machine.

10 – W & H offers the W-7 as
(1) Hand feed W-7 – $470
(2) Power infeed W 7-PF – $645
(3) Power infeed and outfeed W7-S – $740

11 – Laminated with stainless-steel sheet.

12 – Anodized

13 – Table saw mortising 30mm shaper attachments

DUST COLLECTION: THE PICTURES TELL THE STORY

All thicknessing machines, big and small, put out lots of shavings and fine dust — more than any other shop tool except large sanders. You can try a shop vac to solve the problem, but most of these machines fill quickly and clog easily when put to this use unless there's a lot of suction.

We had super results with the Elektra-Beckum dust-extraction system pictured here before and after hookup. It uses a dustbag filter and plastic bag (some manufacturers use drums or second sets of canvas bags) connected to a large, cast, impeller-style fan. The minimum-4" hoses you find on these devices move an amazing quantity of dust and debris.

At $350 and up, we think a dust collector makes sense — you'll reduce the health risks of breathing all that stuff, and your shop and home will stay much cleaner.

Produced with George Granseth
Photographs: Hopkins Associates; Jim Kascoutas

A Little Bit Country

Print this article

Mallard Mug Rack

Add an air of country charm to your kitchen with this outdoorsy pine mug rack. Or, hang it in your entry area for a quaint coatrack.

MACHINING THE PARTS

1 Rip and crosscut the back piece (A), shelf (B), and the shelf supports (C) to the sizes listed in the Bill of Materials. Cut the duck blank (D) to 4x8".

2 Use a compass to mark the corner radii on the back piece and shelf. Then, lay out and mark the shelf location, shelf mounting holes, peg holes, and the holes for mounting the rack to the wall on the back piece where indicated in the Exploded-View Drawing.

3 Drill the holes for attaching the rack to the wall and the holes for attaching the shelf to the rack where shown in the drawing.

4 Cut the radiused corners on the back and shelf to shape and sand the edges smooth. Fit your router with a ¼" round-over bit. Rout the front edge of the back piece and all the edges of the shelf *except* for the edge that you will attach to the back piece later.

5 Using carbon paper, transfer the full-sized patterns on page 84 for the shelf supports (C) and the duck (D) onto the pine stock. (Don't forget to transfer the painted areas of the duck and the location of the dowel holes.) Drill a pair of ¼" holes 13/16" deep in the bottom of the duck blank. (We used a doweling jig to center the holes.)

6 Insert ¼" dowel centers in the holes in the duck blank. Center the duck on the back piece, and transfer the location of the holes to the top edge of the back piece. Using a doweling jig, drill two ¼" holes 13/16" deep in the top of the back piece where marked with the dowel centers. Cut two pieces of ¼" dowel 1½" long. Glue the dowels in the holes in the duck. Do *not* mount the duck to the rack yet.

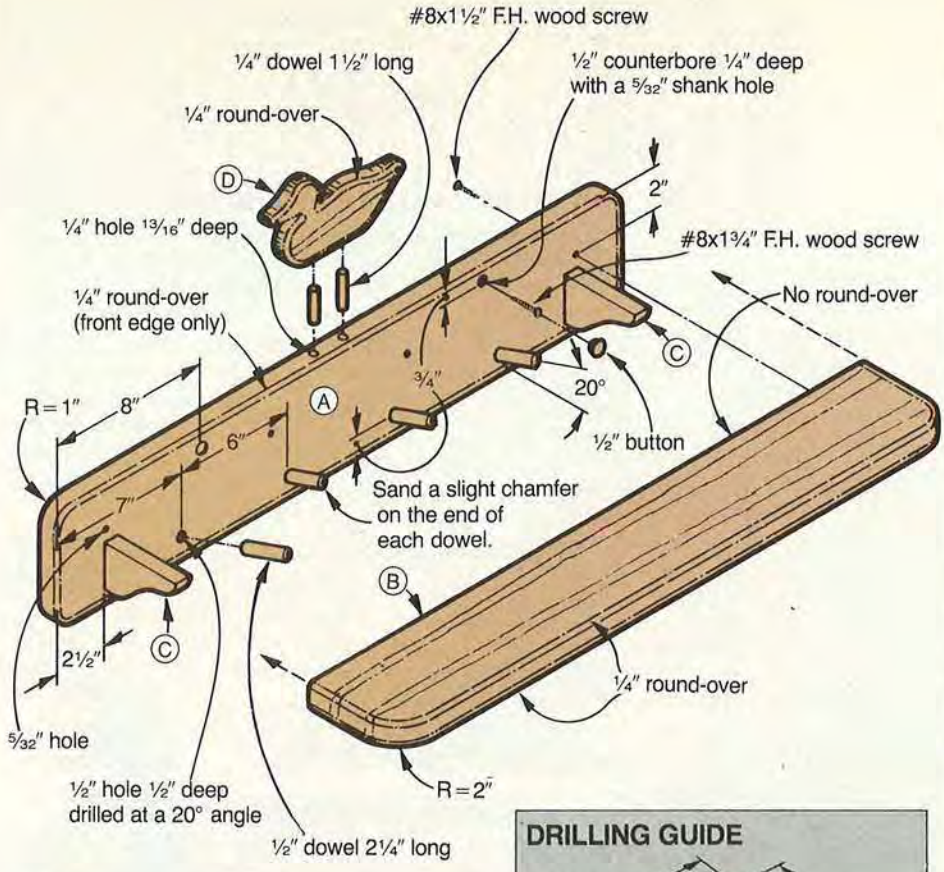
7 Cut the supports and the duck to shape with a scroll, band, or jigsaw. Sand all contours smooth, and sand or rout a ¼" round-over on the front edge of the duck.

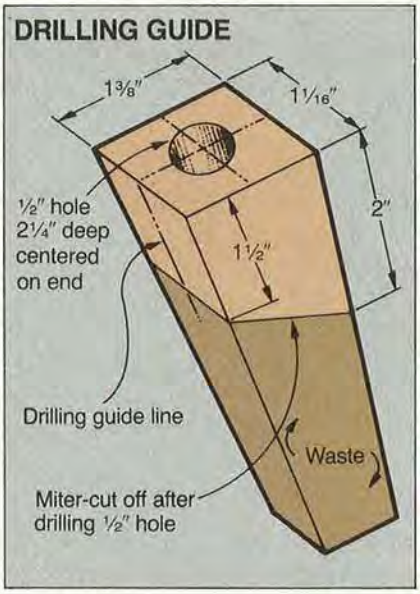
8 Cut four pieces of ½" dowel to 2¼" for the pegs. Sand a slight chamfer on one end of each dowel.

DRILLING THE PEG HOLES AND ASSEMBLING THE MUG RACK

1 To make the drilling guide shown in the photo, *right,* cut a piece of the 1 1/16" pine to 1⅜" wide by 6" long. Drill a ½" hole 2¼" deep into one end of the piece (we used a doweling jig to drill as straight as possible). Now, miter-cut the drilled end at 20°, 2" from the end, where shown in the Drilling-Guide Drawing, *opposite page.* Now, mark a line across the center of the hole and down the shortest edge of the drilling guide, where shown in the photo and drawing.

2 Clamp a strip of wood to the bottom of the back piece to act as a fence as shown in the photo. Wind tape on your drill bit 2⅜" back from the tip to act as a depth stop. Next, position the drilling guide





Bill of Materials					
Part	Finished Size*			Material	Qty.
	T	W	L		
A	¾"	5½"	32"	pine	1
B	1 1/16"	5"	31½"	pine	1
C	¾"	2⅜"	4"	pine	2
D*	¾"	3⅞"	7⅞"	pine	1

*Part marked with a * is cut larger initially, then trimmed to finished size. Please read the instructions before cutting.

Supplies: #8x1½" flathead wood screws, #8x1¾" flathead wood screws, ¼" birch dowel, ½" birch dowel, ½" screw-hole buttons, Minwax Wood Conditioner, stain, water-soluble acrylics for painting duck, lacquer or polyurethane

Cutting Diagram

¾x7¼x48" Pine

1 1/16x5½x48" Pine

against the fence and align the centered line on the drilling guide with the lines marking the location of the peg holes. Finally, drill four ½" holes ½" deep for the angled pegs where marked and then remove the fence.

3 Glue, clamp and screw the shelf to the front of the back piece (B) in the location marked earlier. After the glue forms a tough skin, scrape with a chisel or scraper.

4 Apply glue to the shelf supports and position them under the shelf and against the back piece (we used masking tape to hold the supports in place until the glue dried).

5 Place a dab of glue in each peg hole. Insert a peg in each hole so the chamfered end protrudes.

FINISHING AND PAINTING

1 Finish-sand the entire rack. Remember that any scratches not sanded out, especially in a softwood such as pine, will become even more apparent when you apply the stain.

2 Finish as desired. (If you plan to stain the pine, use a wood conditioner first — it helps the wood accept stain evenly. We applied a coat of Minwax Wood Conditioner to the rack after sanding. Then, we stained the rack and screw-hole buttons.) To finish the duck, we painted the areas shown in the Duck Pattern with water-soluble acrylic paints. After the paint dried, we stained the duck, wiping any excess stain from the painted areas. Finally, we applied two coats of spray-on lacquer to the rack, buttons, and duck. (Polyurethane is fine, too.)

3 After the finish on the duck has dried, glue the duck to the rack.

4 Screw the rack to your wall with #8x1¾" flathead wood screws. Push the buttons into the counterbore over the heads of the screws.

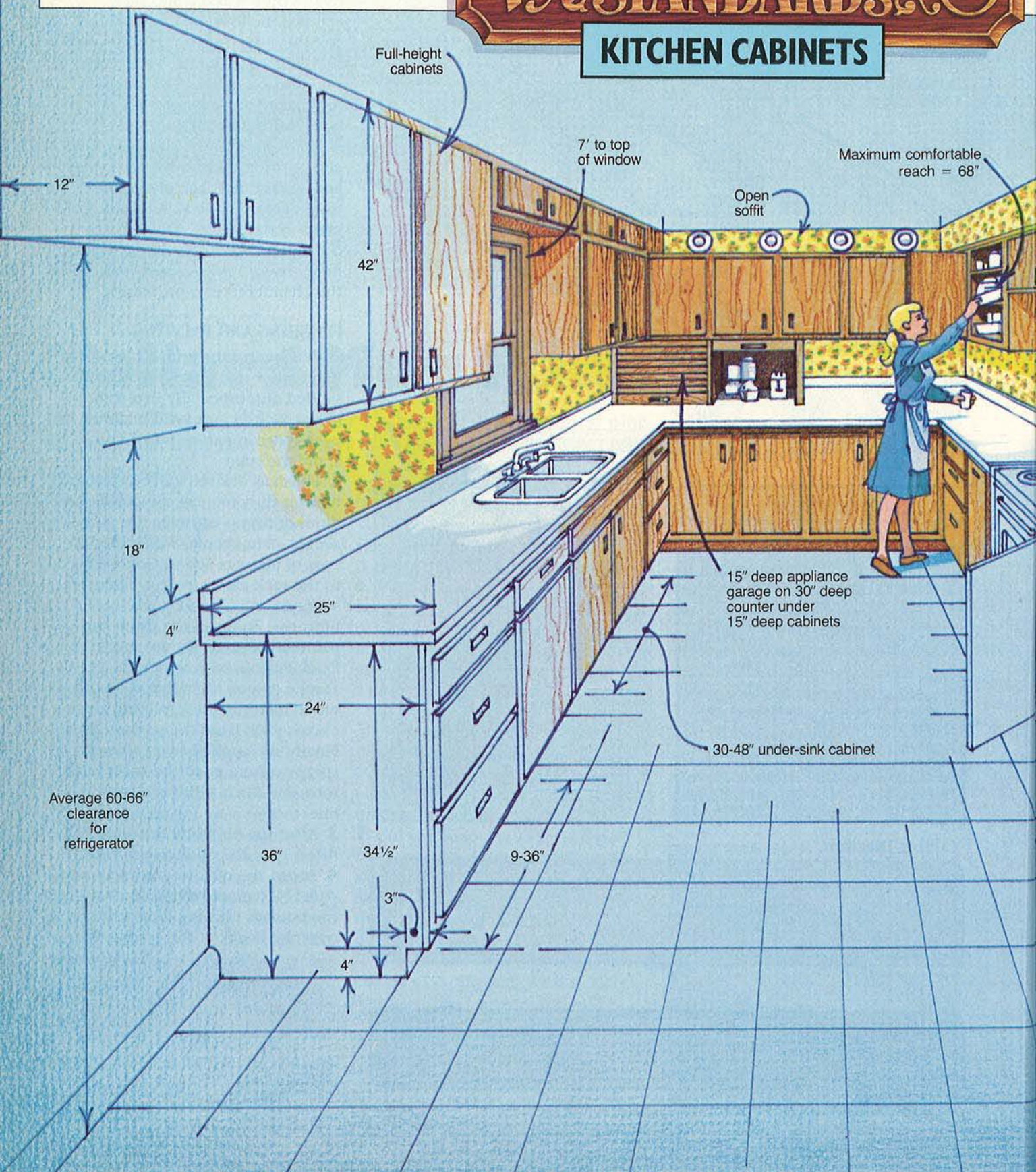
Refer to page 84 for full-sized duck and support patterns.

Project Design: Jay Wallace
Photographs: Jim Kascoutas
Illustrations: Kim Downing

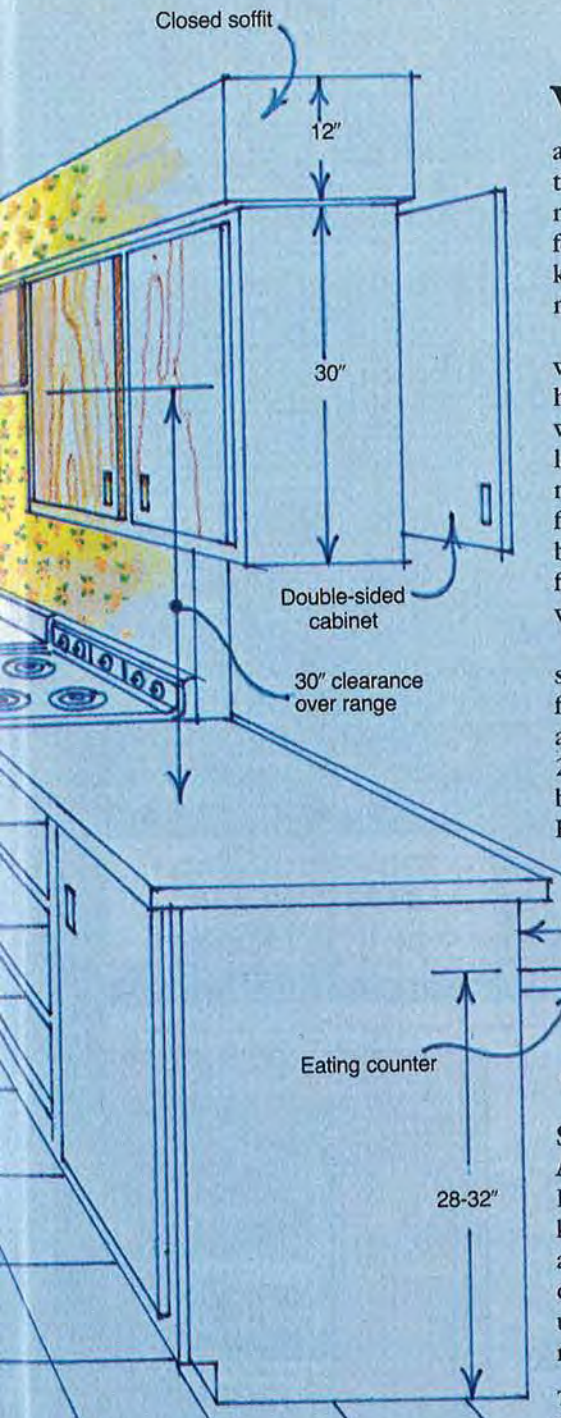
Previous articles in this series include: "Seating" and "Tables", Feb., 1986, pp. 54–56, 61–63; and "Screws", June, 1986, pp. 46–49.

WOODWORKERS' STANDARDS

KITCHEN CABINETS



Cabinets come in many sizes and configurations — with good reason. How far you can reach comfortably, the space required for chores, and the height and width of appliances all govern cabinet measurements. Here are the dimensions you need to do the job.



This kitchen has many more cabinets of different dimensions than you'd find in any one kitchen. That's so you can see how different-sized cabinets can efficiently fill space. At left, full-height cabinets add storage space. At one end of the kitchen, you'll see extra-deep cabinets and counter. On the right, "standard" height cabinets are used with a closed soffit.

Print this article

Why are countertops almost always 36″ from the floor? Because that's long been considered the most comfortable worktop height for a woman, and, at least so far, kitchens have been designed primarily for use by women.

Research indicates that most women have a comfortable overhead reach of 68″, the height at which you'll find the highest regularly used shelf in a wall-hung cabinet. That's also why the more frequently used upper drawers in a base cabinet are about 28″ from the floor — so they can be opened without stooping.

How far the average woman can stretch her arms straight out in front of her is called "reach radius," and that determines not only the 25″ standard depth of a countertop, but the depths of cabinets, too. Reach radius, plus the amount of space needed for cooking, baking, and cleanup, also decides the clearance between wall cabinets and countertops, over ranges, and space needed around ovens, sinks, and dishwashers.

STANDARD MEASUREMENTS AND SPECIAL REQUIREMENTS

In the drawing of the composite kitchen, *left,* you'll see how these and other standard measurements come into play in a room with the usual 8′ ceiling. Except for the range, we omitted the appliances you'd normally find in a modern kitchen for the sake of clarity (see appliance dimensions, *page* 67).

We've also indicated three common ways to treat soffits: (1) closed, to conceal the tops of wall cabinets; (2) open, for possible display space above cabinets; and (3) filled with full-height cabinets for additional storage.

Sometimes, standard cabinet dimensions must adapt to special circumstances. In a kitchen designed for the elderly, for example, you'd want to lower the highest functional shelf 3″, raise the lowest shelf or drawer 3″, and provide a work surface about 1½″ lower than standard.

For the physically disabled person who must cook from a wheelchair, countertops should only be 31″ from the floor. To accommodate the chair under the counter during meal preparation, you have to provide a free space 30″ wide by 29½″ high. This allows a full 24″ of forward reach on top of the counter.

Kitchens — and cabinets — also should be tailored to how your family cooks, and the space you have to work with. If you favor lots of fresh-baked breads and pastries, think about a special area with a 30″ deep countertop for rolling dough. Lots of small, labor-saving appliances, such as food processers, might require their own storage area that you'll have to custom-dimension.

If you're starting from scratch with an empty room, use this rule of thumb to calculate the number of cabinets you'll need: Basic storage requires 9′ of base and wall cabinets, *plus* 3′ of cabinets for each member of the family regularly eating at home. A family of four requires 21 running feet of both wall and base units.

Continued

WALL CABINETS: SIZED FOR VERSATILITY

Wall cabinets normally mount directly on the wall, but they can also hang from the ceiling over an island or peninsula with access from both sides. No matter how you use them, wall cabinets should be 12″ deep when installed over a 25″-deep countertop, and 15″ deep over a 30″ countertop.

How high you make wall cabinets depends on how much storage you need. With a closed or open soffit, the standard wall cabinet height is 30″, providing two shelves for three compartments within. If you want to use soffit space for storage, install 42″ full-height cabinets. The different cabinet heights you'd use in open, closed, or full-height situations appear below in the cabinet illustrations.

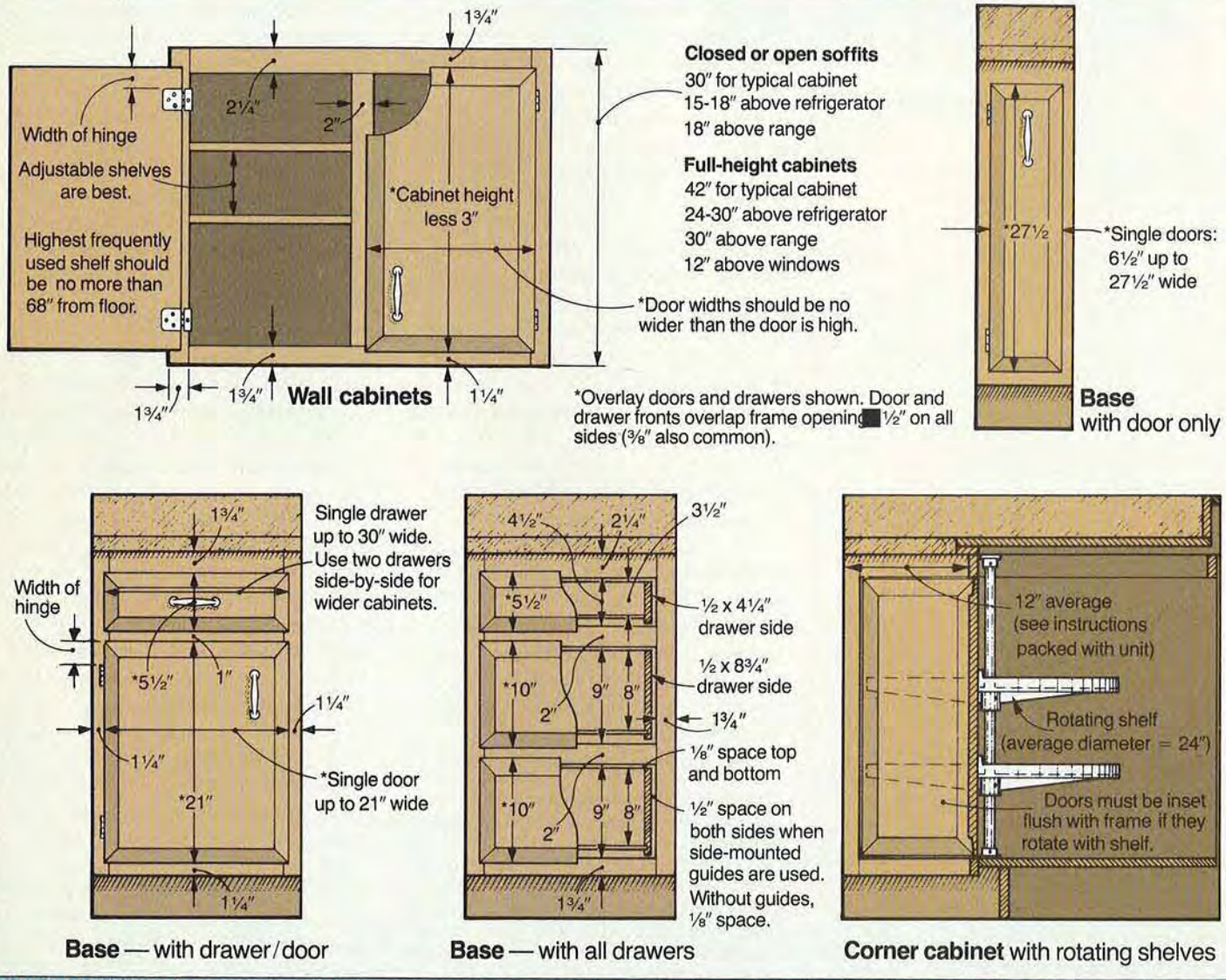
The width of wall cabinets, usually from 9″-36″, is determined by the width of the matching base cabinets immediately below, since in most cases, the units are viewed as a pair. Whether a wall cabinet has one door or two, however, depends on its width. Doors wider than their height tend to sag because of the weight on the hinges, so wide cabinets have two doors.

Detailed dimensions of a wall cabinet are shown in the illustration, *below*. Use them for reference when you detail your kitchen-cabinet project plans.

BASE CABINETS: DIVIDING UP STORAGE SPACE

You may want a special narrow cabinet of 9″ to hold cookie sheets and trays next to the stove, or an under-sink cabinet 42″ wide. However, base cabinets normally measure about 24″ deep and 34½″ high (adding a 1½″ countertop brings them up to 36″). Extra-deep base cabinets of 29″ maximize countertop area for tasks such as baking, or storage for small appliances (you also can set standard-depth cabinets away from the wall and cover them with a 30″ countertop). Toe kicks are 3″ deep by 4″ high.

Divide up the space in a base cabinet with all shelves and a door or doors, all drawers, or a combina-



tion of drawer and doors, as in the typical configurations shown *on the opposite page.* As with wall cabinets, the width of the cabinet determines whether you should use one drawer or door, or two.

ALLOWING FOR SIZE AND USE OF APPLIANCES

Your kitchen appliances also affect the dimensions of many of your cabinets, as well as countertop area. Luckily, appliance manufacturers heed standards, too. That's why a built-in dishwasher fits snugly under a countertop and a drop-in range scoots in with room to spare.

In the box, *below,* you'll find a complete chart of appliance dimensions, as well as those for single-, double-, and triple-bowl sinks. Use these as a planning guide for countertop cutouts and spacing between base cabinets, but *always refer to the specific sink or appliance model you'll use for exact installation instructions.*

Besides dimensions, you'll have to allow countertop workspace to use your appliances, as well as the sink. While your space may require adjusting these ideal situations, here are some considerations:

- Ranges, including built-in or countertop microwaves, should have about 18" of work area on either side; ovens, about 15" on one side.
- To load or unload a refrigerator, allow approximately 18" of counter on the door-opening side.
- Try to provide space on both sides of the sink for cleanup — 30" to the right and 24" to the left.

APPLIANCE AND SINK DIMENSIONS

Unless you buy commercial or European units, almost all appliances fall within the following range of dimensions. Refer to them when planning your cabinets, but get actual measurements before you build.

APPLIANCE	HEIGHT	WIDTH	DEPTH
Range, floor model	35⅛-36"	19½-40"	24½-26¼"
Range, w/eye-level oven	61½-67 7/16"	29⅞-40"	25½-27⅝"
Range, drop-in	23-23½"	22⅞-23⅞"	22⅛-25"
Cooktop	2-3"	12-48"	18-22"
Wall oven, single	23½-25"	21-24"	21⅛-22 11/16"
Wall oven, double	39¼-50⅜"	21-24"	21⅛-22 11/16"
Wall oven w/broiler	38-40 3/16"	21-24"	21⅛-22 11/16"
Range hood	5½-7½"	24-72"	12-27½"
Microwave	13⅝-18"	21½-22½"	14½-22"
Refrigerator	55½-68⅞"	24-35½"	26 9/16-32⅞"
Dishwasher	33½-34½"	23-24¼"	23 1/16-26¼"
Trash compactor	33½-34½"	11⅞-14⅞"	18-24 3/16"

SINK	LENGTH	WIDTH
Single bowl	11½-33"	13-22⅜"
Double bowl	28-46"	16-25"
Triple bowl	43-54"	22"

SHELVING, SPECIAL CABINETS, AND EATING COUNTERS

If possible, make all cabinet shelving adjustable with shelf supports or a pin system. That way, you can vary heights and spacing to meet your changing needs.

Specialized cabinets add convenience or utilize normally wasted space, such as the lazy susan corner shown on the facing page. You can purchase its rotating shelves as a unit to install in your handcrafted cabinet.

Other specialty cabinets include those to house microwaves and separate conventional ovens, pantries and broom closets, and units used for desks and cookbook storage. Cabinets of this type have to be customized to your space.

Eating counters range from the informal high bar to casual family seating at table height. Bar-height counters measure 42"-45" from the floor and require about 7"-9" knee space with a 30" bar stool that has a footrest. You can also build one to match your 36"-high countertop by providing a 10" knee space and using 24"-high stools. Table-height counters are 28"-32" from the floor, and require 18" of knee room and chairs 18" high.

How long should your counter be? Allow 21" of length for each person served. A 15" depth provides space for a place setting. Two diners facing each other at a table or booth need a minimum of 30" combined.

For more information about planning and building kitchen cabinets, refer to the following:

- "Basic Cabinet Construction," *WOOD* Magazine, Feb., 1985, p. 59.
- Better Homes and Gardens® *Step-by-Step Cabinets & Shelves,* Meredith, 1983, $6.95.
- Better Homes and Gardens® *Your Kitchen,* Meredith, 1983, $9.95.
- *Building Your Own Kitchen Cabinets* by Jere Cary, The Taunton Press, 1983, $12.95.

Produced by Peter J. Stephano and James R. Downing
Illustrations: Kim Downing; Jim Stevenson

A Gem of a Gift!

24-Karat Jewelry Case

Print this article

The display carousel on the left side of the jewelry case, *above*, keeps hanging necklaces within easy reach and tangle-free.

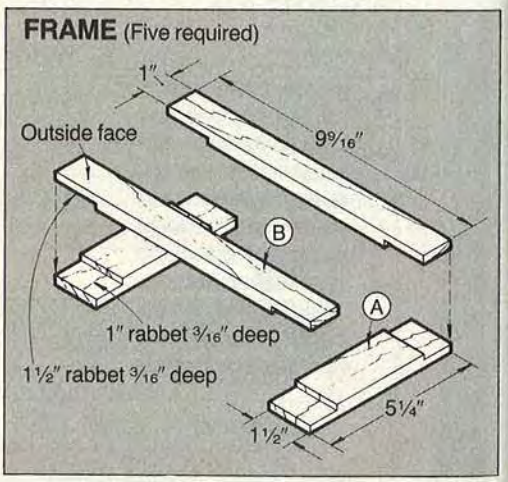
Any woman appreciates having a special place to keep her small jewelry pieces neatly organized — especially when the unit looks as exquisite as its contents. Routed drawer pulls and handles of bird's-eye maple help put this walnut jewelry case in a class by itself.

MAKING THE FRAMES

Note: *You'll need some thin stock for this project. You can resaw your own or order it. See the Buying Guide on page 71 for our source.*

1 Cut all the rails (A) and stiles (B) for the divider, sides frames, and for the doors to the sizes listed in the Bill of Materials.

2 Mark the half-lap joints on the rails and stiles where shown on the drawing, *below.* Then, use a dado blade on your table or radial-arm saw to test-cut the joints. Adjust if necessary, and cut the half laps.

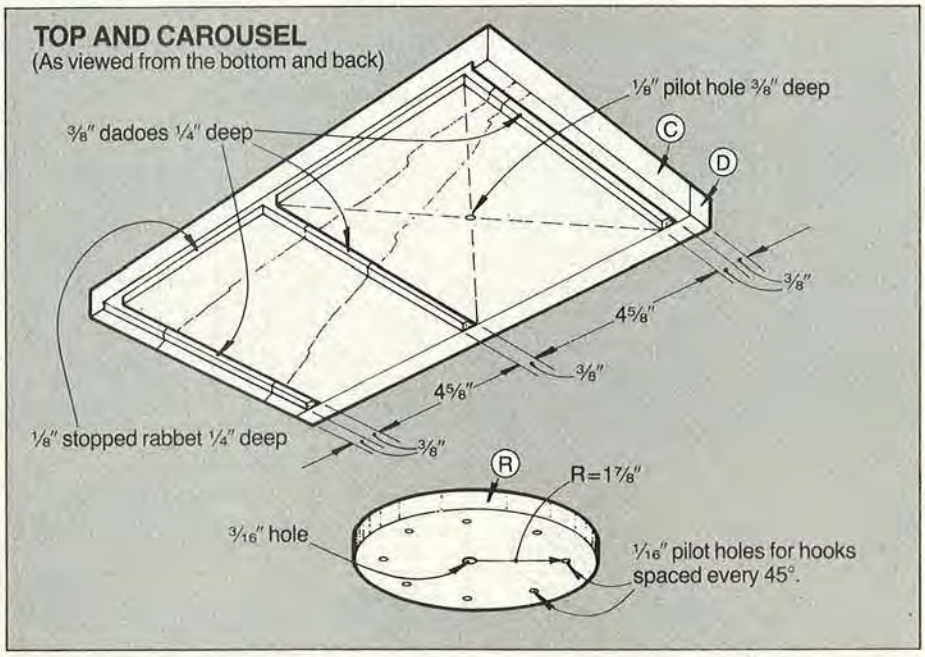


3 Glue and clamp the rails and stiles into five frames (two for the doors, two for the sides, and one for the divider), checking for square.
4 Rip the two side frames and the divider to 4⅞". Then, rip the opposite stile of the divider for a 4¾" finished width. Finally, cut a notch for the magnet in the divider, and sand the frames smooth.
5 Rout ¼" rabbets ¼" deep in the openings in the back face of the two side frames, the divider, and the two doors (see the Buying Guide for information on the bit we used). Square the corners with a chisel. Rout a ¼" rabbet ⅛" deep along the back edges of the side frames.
6 Take the frames to a glass dealer and have him cut the mirror for the divider and the glass for the left side and doors. (We had our pieces cut 1/16" less in both length and width to allow for contraction of the wood frames.) Also, have him cut the 4½x9" mirror panel for the necklace compartment.

MACHINING THE CASE TOP AND BASE

Note: *The parts for the top and base are cut extra wide so that you can rip the front strips (D, F) from them. This simplifies cutting the stopped dadoes and rabbets.*

1 From ¾" walnut, cut two pieces to 6x11⅛" for the top (C, D) and the base (E, F).
2 Rip a ¾"-wide strip from the front edge of the top to form part D. Then, rip a ⅜" strip from the front edge of the base to form part F. Finally, rip the top (C) and the base (E) to finished width (4⅞").
3 Cut ⅜" dadoes ¼" deep in the top and base where dimensioned in the Exploded-View, *page 70*, and Top and Carousel Drawings. Next, cut the ⅜ rabbets ¼" deep on each end of the base.
4 Rout a ⅛" rabbet ¼" deep along the back edge of the base (see the Exploded-View Drawing). Rout a stopped rabbet the same size in the top where shown in the Top and Carousel Drawing, *below left.* (We clamped stops to our router table fence to ensure that we stopped the rabbet at the right points when rabbeting the top.)
5 Glue part D to C, making certain that the ends of the two parts are flush. Then, glue part F to E. Later, sand all surfaces flush.



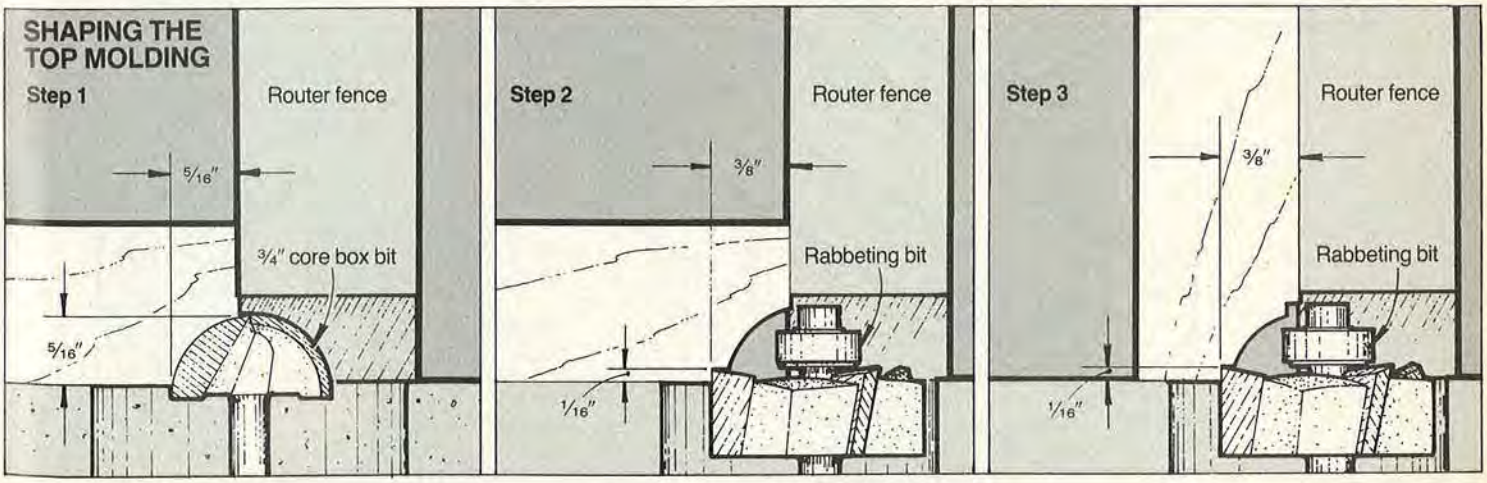
CUTTING THE TOP AND BASE MOLDINGS

1 Start by cutting a strip of ¾" walnut to 1¾x24" for the base molding. (You'll cut parts G and H to length from this strip later.)
2 Rout the top (C, D) following steps 1, 2, and 3 in Shaping the Top Molding Drawing. To form the molding for the bottom (G, H), follow steps 1 and 2 *only.*
3 Finally, cut a ¾" rabbet ⅜" deep along the base molding to house the base (E, F). Set the molding strip aside for now.

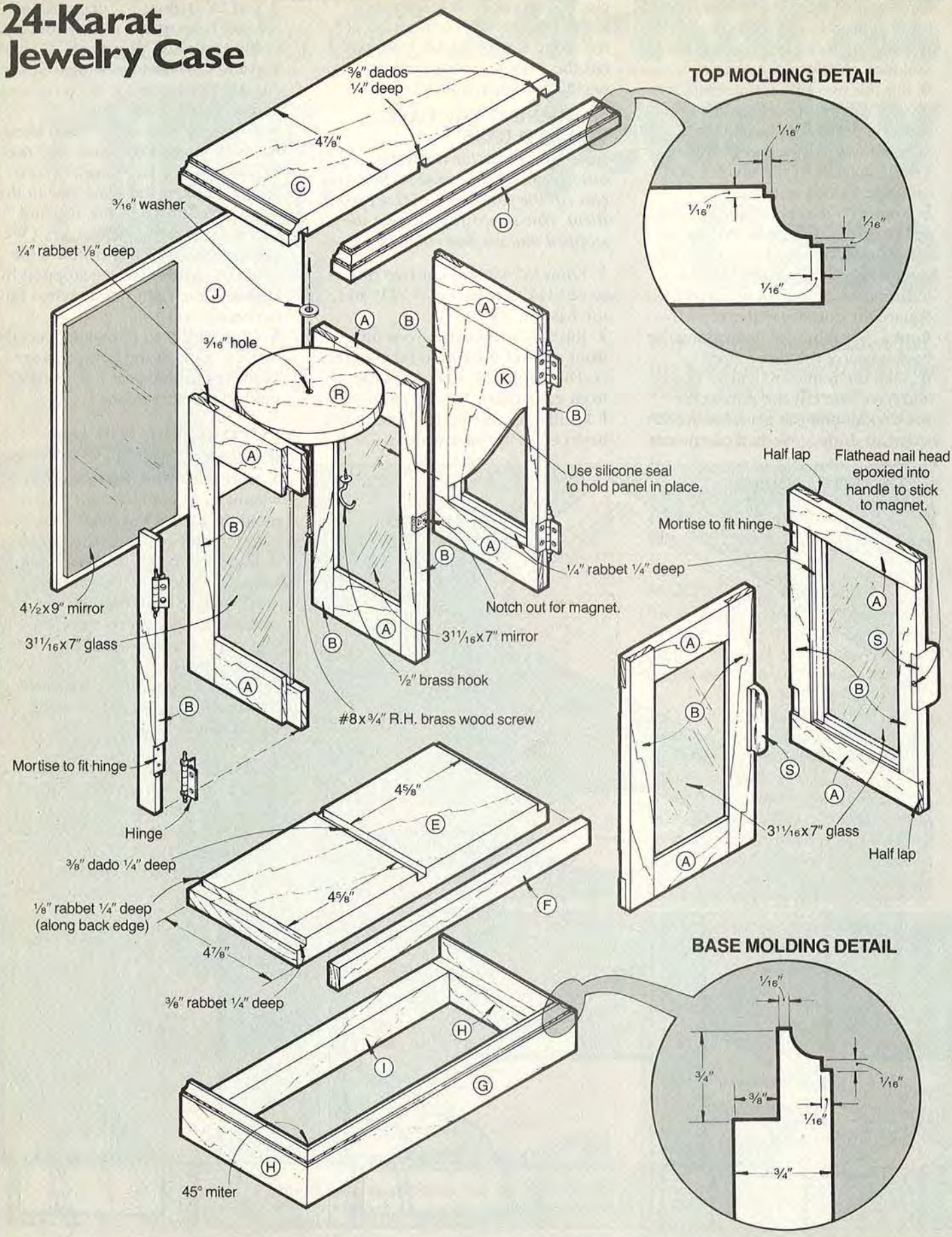
COMPLETING THE CASE

1 Refer to the Top and Carousel Drawing and locate the mounting hole for the carousel (R) by drawing diagonals on the bottom of the left-hand side of the top (C, D).

Continued



24-Karat Jewelry Case



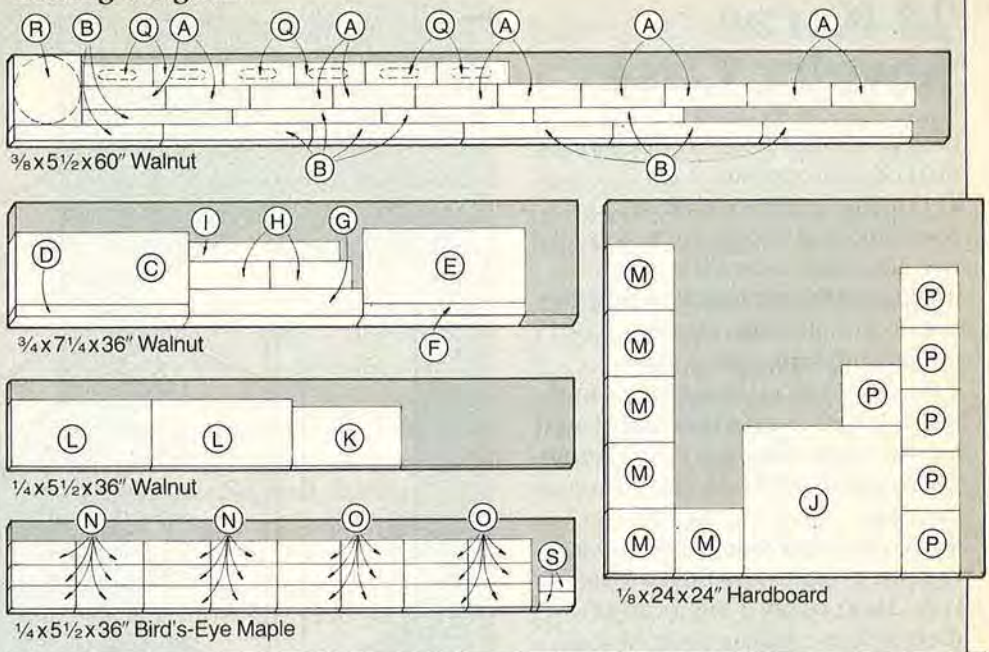
Bill of Materials

Part	Finished Size*			Material	Qty.
	T	W	L		
A	3/8"	1½"	5¼"	walnut	10
B	3/8"	1"	9 9/16"	walnut	10
C*	¾"	4⅞"	11⅛"	walnut	1
D	¾"	¾"	11⅛"	walnut	1
E*	¾"	4⅞"	10⅜"	walnut	1
F	¾"	⅜"	10⅜"	walnut	1
G*	¾"	1¾"	11⅛"	walnut	1
H*	¾"	1¾"	5⅝"	walnut	2
I	¾"	1"	9⅝"	walnut	1
J	⅛"	9 9/16"	10⅛"	hardboard	1
K	¼"	3 11/16"	7"	walnut	1
L	¼"	4¼"	9"	walnut	2
M	⅛"	4¼"	4⅜"	hardboard	6
N	¼"	1 5/16"	4¼"	bird's-eye maple	12
O	¼"	1 5/16"	3 13/16"	bird's-eye maple	12
P	⅛"	3 13/16"	4"	hardboard	6
Q	⅜"	1 7/16"	4½"	walnut	6
R	⅜"	4⅜" diam.		walnut	1
S	¼"	⅞"	2¼"	bird's-eye maple	2

*Parts marked with a * are cut larger initially, then trimmed to finish size. Please read the instructions before cutting.

Supplies: #8x¾" roundhead brass wood screws, 3/16" flat washers, 8 — ½" brass cup hooks, double-faced tape, magnet from a refrigerator note holder, 2 — 1x17 nails, epoxy, clear silicone sealant, ⅛" glass, ⅛" mirror, finish

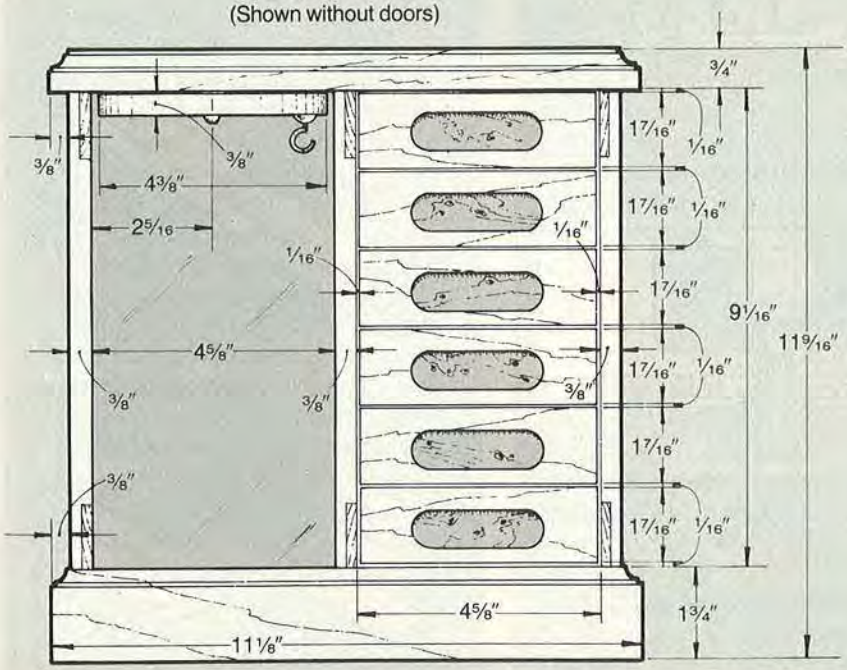
Cutting Diagram



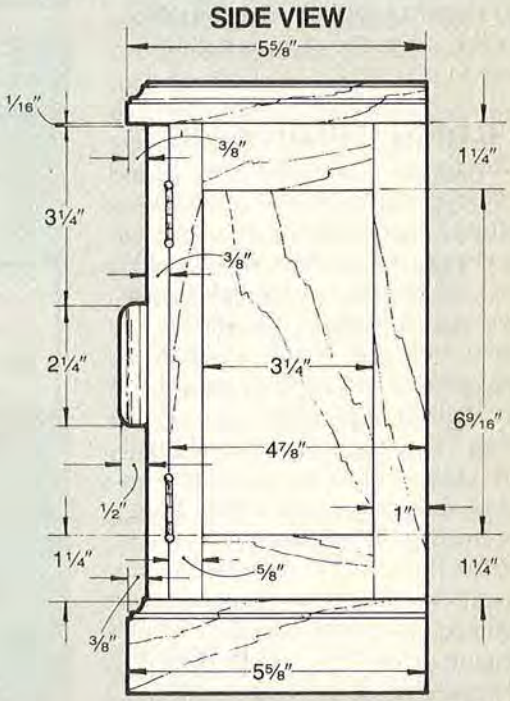
BUYING GUIDE

- **Hinges.** Two pairs, ball-tipped, 1¼x1 3/16". Catalog no. H2200, $2.10 per pair. Craftsman Wood Service, Dept W, 1735 W. Cortland Ct., Addison, IL 60101. Phone: 312/629-3100.
- **Thin stock.** ⅜" walnut. Catalog no. W9725, $3.98 per square foot. ¼" bird's-eye maple. Catalog no. W9112, $3.95 per square foot. Craftsman Wood Service (address above).
- **Router accessories.** *Rabbet bit:* catalog no. 9HT25581, $6.49. *Arbor set:* catalog no. 9HT25601, $4.69. To order, call your local Sears store. You will need a ¼" straight bit, ¼" round-over bit, ⅜" core box bit, ⅝" cove bit, and ½" straight bit.
- **⅝" guide bushing.** Check with your local dealer for a template to fit your make of router. If not available, order a Router Guide Bushing Set, which includes a universal base-plate and four guide bushings. Catalog no. 11V12-VA, $9.95. Woodcraft, 41 Atlantic Ave., P.O. Box 4000, Woburn, MA 01888. Or call 800/225-1153.

FRONT VIEW
(Shown without doors)



SIDE VIEW



Continued

24-Karat Jewelry Case

Drill a ⅛" pilot hole ⅜" deep at the marked center point.

2 Cut the hardboard back (J) to size. Glue and clamp the top, base, two side frames, and the divider together. Place the back in position, but do not glue it in place yet — it helps hold the case square.

3 Miter-cut the strip of base molding to length for parts G and H, and cut the back stretcher (I) to length. Then, glue parts G, H, and I to the case.

4 Cut the right-side panel (K) to the size listed in the Bill of Materials. Then, apply a fine bead of clear silicone sealant to hold the panel to the frame (silicone sealant allows for expansion and contraction of the frame).

5 Using silicone sealant, attach the mirror to the divider.

6 Cut the drawer-support uprights (L) to size. Then, cut ⅛"-wide dadoes and a rabbet exactly where dimensioned in the drawing, *right.*

7 Glue and clamp the uprights in the case (make sure they're flush with the back of the divider and side frame). Measure the length of the six drawer supports (M) so that they fit snugly in the uprights. Cut the inserts to size, and glue them in place.

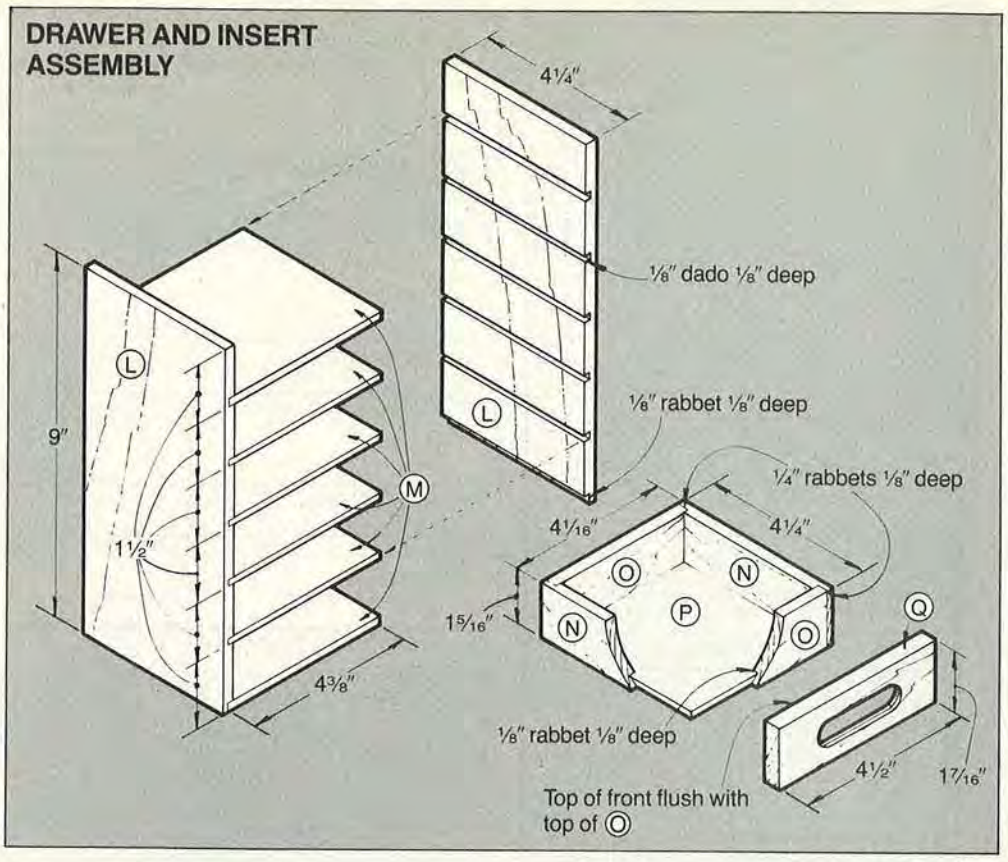
BUILDING THE DRAWERS

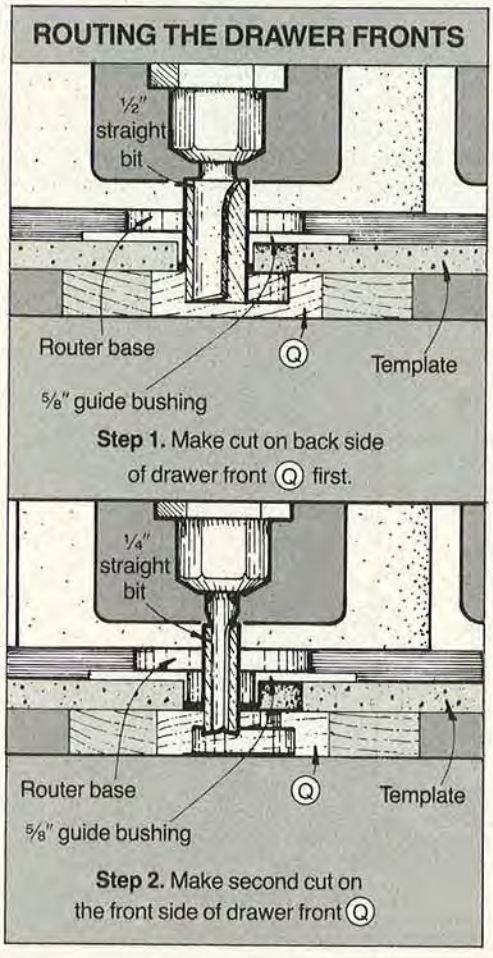
1 Rip three 1⁵⁄₁₆" strips from ¼" bird's-eye maple as laid out in the Cutting Diagram, *page 75* , for the drawer sides (N) and ends (O). Cut a ⅛" rabbet ⅛" deep along one edge of each strip to accept the drawer bottoms. Finally, cut the drawer sides and ends to length (see the Bill of Materials).

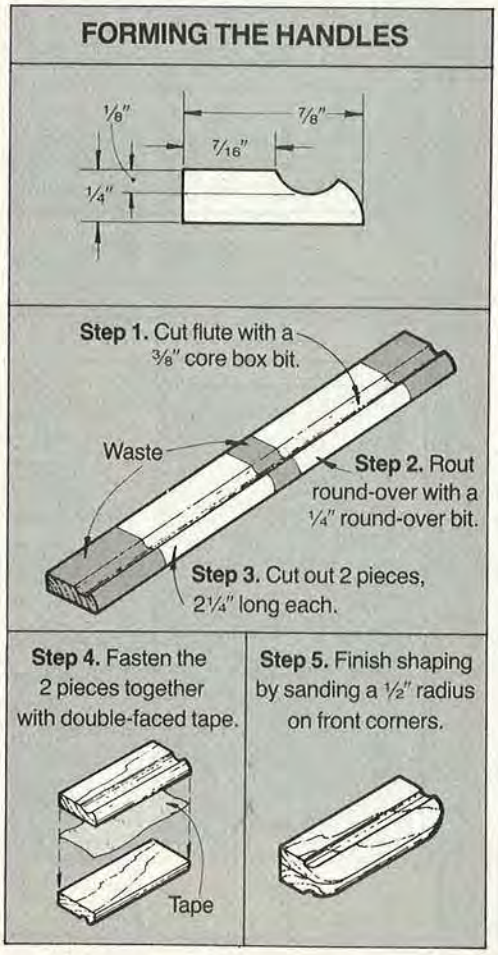
2 Cut ¼" rabbets ⅛" deep along both ends of each drawer side.

3 Cut six drawer bottoms (P) to size from ⅛" hardboard.

4 Glue the drawers together, using a band clamp or rubber bands to hold each assembly together while the glue dries. Check each drawer for square while the glue is still wet.





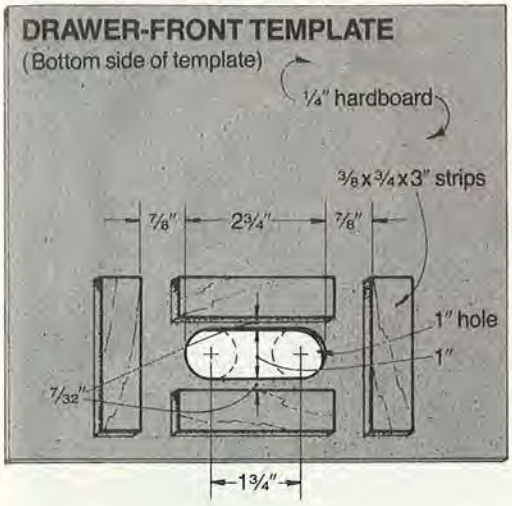

FORMING THE HANDLES
⅛"
⅞"
7⁄16"
¼"
Step 1. Cut flute with a ⅜" core box bit.
Waste
Step 2. Rout round-over with a ¼" round-over bit.
Step 3. Cut out 2 pieces, 2¼" long each.
Step 4. Fasten the 2 pieces together with double-faced tape.
Tape
Step 5. Finish shaping by sanding a ½" radius on front corners.

5 After the glue has dried, remove the clamps and scrape off any excess glue. Sand each drawer smooth.

MAKING THE DRAWER FRONTS

1 Make the walnut drawer fronts (Q) by cutting ⅜" walnut to the dimensions listed in the Bill of Materials.

2 To form the finger pull in each front, start by making the template shown in the drawing, *below.* First,



drill two 1" holes 1¾" apart on center through ¼" hardboard. Then, cut out the section between the holes with a jigsaw, and smooth the edge of the opening with a rasp and sandpaper. (Take your time when forming the opening on the template for pleasing results on the actual drawer fronts later.) Glue wood strips to the hardboard so that each drawer front will be held firmly in place and centered on the template opening.

3 Install a ⅝" guide bushing (see the Buying Guide if you don't already have one) to the base of your router. Then, fit and adjust a ½" straight bit in your router to make a cut ¼" deep in the drawer front, as shown in Step 1 of the drawing, *left.* Rout out the recess on the back side of each drawer front.

4 Replace the ½" bit with a ¼" straight bit. Turn the drawer front (Q) over in the template and make the second cut as shown in Step 2 of the drawing, *left.*

ATTACHING THE DRAWER FRONTS AND CAROUSEL

1 Slide the drawers into the drawer openings. The front surface of each drawer should be flush with, or slightly shy of, the front edge of the insert assembly (L, M). If not, sand the drawer ends until you have a good fit.

2 Starting at the bottom and working up, glue and clamp a drawer front to the front of each drawer, centered from right to left and flush with the top edge (see the Front-View Drawing, *page 75* , for proper clearance around each drawer front). If the spacing is too tight, just sand the edge of the drawer front down a bit. When you're finished, remove the case back (J) and spacers.

3 Make the carousel (R) by cutting a 4⅜"-diameter disk to shape from ⅜" walnut with a band saw. Sand the edges smooth. Then, drill a 3/16" hole through the center of the walnut disk and a 1/16" pilot hole for each of the brass hooks, where shown in the Top and Carousel Drawing, *page 69* .

FITTING THE DOORS AND MAKING THE HANDLES

1 Using a table saw or small hand plane, size the doors by shaving equal amounts off opposite edges (be careful not to remove too much stock at one time). Fit the doors flush with the sides of the case. There should be a 1/16" gap between the two doors and between the top and bottom edges of the case.

2 Cut mortises for hinges in the doors and case where shown in the Side-View Drawing, *page 71* . Now, drill pilot holes for the hinge screws in both doors and sides (because the doors are so thin, use a stop on your drill bit). Check the length of the hinge screws against the thickness of the doors — you will probably heed to shorten the screws with a file. Do *not* attach the doors yet.

3 To make the door handles (S), cut a strip of ¼"-thick maple to ⅞x8" (be sure to use a push block when ripping to prevent kickback). Then, follow steps 1 through 5 in the drawing, *opposite page.* Use a dado blade in your table saw to cut a notch in each door for the handles (see the Side View, *page 75* , for placement). Glue and clamp a handle to each door.

APPLYING THE FINISH AND FINAL ASSEMBLY

1 Use masking tape and paper to protect the mirror in the divider. Then, apply the finish of your choice to the drawers, doors, carousel, and case. (We sprayed on one coat of sanding sealer and followed up with two coats of lacquer. Whenever we use a spray-on finish, *especially* a lacquer, we always use a fume-respirator mask. The mask guards against vapors and dust.

2 Fit the back (J) onto the case, mark the position of the mirror, and remove the back. Glue the mirror to the hardboard back. Glue the back to the case. (We used rubber bands to hold the back in position until the glue dried so as not to mar the finish.) Attach the glass panes to the left frame and the doors.

3 Screw the cup hooks in place, and attach the carousel to the case top with a screw and washer (the washer goes between the carousel and top). Leave the screw just loose enough so that the carousel will turn easily.

4 Attach the doors and epoxy the magnet to the divider. Snip off all but ⅛" from two 1x17 flathead nails. Drill a pilot hole and epoxy the nailheads in place, one on each door, centered on the magnet. (When drilling the pilot holes, be careful *not* to drill through the door.)

5 Line the bottom of each drawer with velvet or felt. You can also custom-fit the drawers with either dividers or padded compartments for storing rings and other accessories.

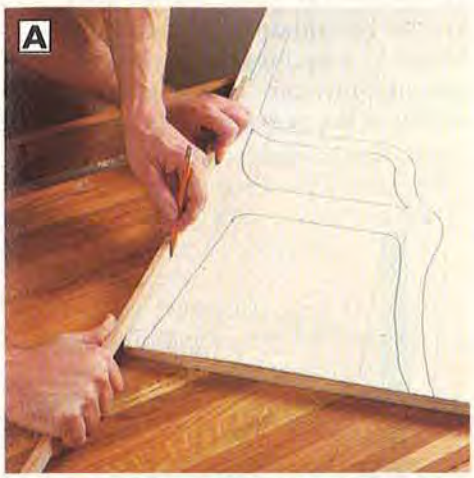
Produced by: Marlen Kemmet with Yosh Sugiyama
Project Design: Inga Vesterby
Photographs: Hopkins Associates
Illustrations: Bill Zaun; Randall Foshee

Tea for Two!

Print this article

Tiny Table and Chairs

Jill and Bailey, two very proper 4-year-olds, shared afternoon tea at *WOOD* Magazine not long ago. Our little table and chairs helped the occasion seem very grown-up indeed. Build this set from just one 4x8′ sheet of plywood (we used ribbon-stripe mahogany) and delight someone special.

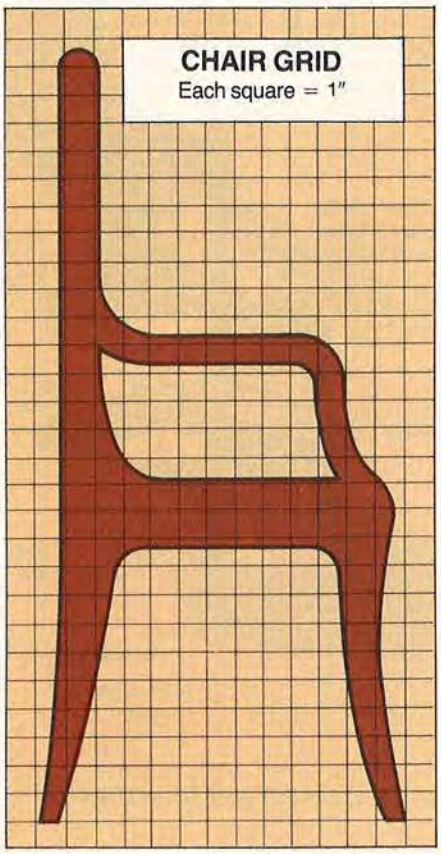


FIRST, CUT OUT THE CHAIRS

1 Cut your plywood panel into two 48x48″ pieces. Noting the direction of the veneer grain in the Cutting Diagram, *page 76,* rip two 13x48″ pieces from one of the pieces to yield the four chair sides (A).

2 Using a ruler and a straightedge, lay out 1″ squares on a large piece of heavy paper to form a 15x30″ grid pattern. Transfer the profile of the chair side from the Chair-Grid Drawing, *below,* to the full-sized pattern. (To form the long curve on the back leg, we worked with a helper and bent a flexible strip of wood as shown in photo A, *left.)*

3 Use spray adhesive or double-faced tape to secure the pattern to the plywood. Use a band saw or jigsaw fitted with a fine-toothed blade to cut the chair side to shape, cutting just *outside* the marked lines. To make the cutouts, drill a blade-access hole through the chair side, then cut just *inside* the marked line with a jigsaw.



4 Sand the chair side to finished shape. (This side will serve as a template for the others, so take your time.) Now, remove the pattern, and sand off any sticky residue.

5 Trace the outline of your template onto the ¾″ plywood for the three remaining chair sides. Cut the chair sides to shape, cutting slightly to the scrap side of the marked lines.

6 Use double-faced tape to stick the template to one of the rough-cut chair sides. Center the template on the rough-cut piece so that the excess of the rough-cut piece protrudes over both edges of the template. Then, fit your router with a ¼″ flush-trim bit. With the template on the bottom, lower the bit so that the pilot rides on the template, and trim the rough-cut side to shape as shown in photo B, *far left.* Now, separate the two chair sides, and repeat the routing procedure with the remaining chair sides, always using the same template. Sand the routed edges smooth.

7 Lay out the shape of the backrest (B) on a piece of paper (see the Front-View Drawing, *page 76,* for dimensions). Cut the pattern and secure it to the plywood as shown in photo C, *far left.* Trace the outline of the backrest onto the plywood, and remove the pattern. Drill ½″ blade-access holes where necessary for the interior cuts, and cut

Continued

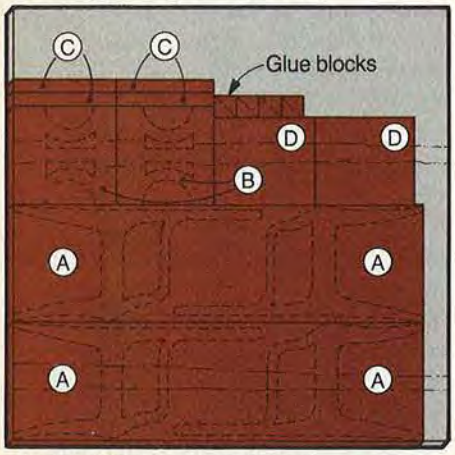
Tiny Table and Chairs

the backrest to shape with a jigsaw. Finally, sand all the edges smooth.
8 Using the first backrest as a template, make the second, just as you made the second chair side (refer back to steps 5 and 6).

ASSEMBLING THE CHAIRS

1 Cut the stretchers (C) to the size listed in the Bill of Materials. Locate the center of each rail end, and drill a ⅛" pilot hole ½" deep for later ease in fastening between the chair sides. Sand a slight round-over on the bottom edges of each stretcher.
2 Mark the location of the stretcher and backrest mounting-screw holes on one chair side where indicated on the Exploded-View Drawing. Stack the chair sides in pairs, and drill 5/32" pilot holes through both sides where marked. Switch to a ⅜" drill bit and counterbore the holes ⅜" deep on the outside face of each chair side.
3 Dry-clamp the chair sides, stretchers, and backrest together, tilting the backrest where shown in the Side-Section Drawing, *below*. (We used a small nail to help line up the holes in the stretchers with the holes in the chair sides.) Drive the screws into place. Switch back to a ⅛" bit and drill the mounting holes ½" deep into the backrest, centered through the 5/32" holes drilled in the previous step.

Cutting Diagram (Chairs)

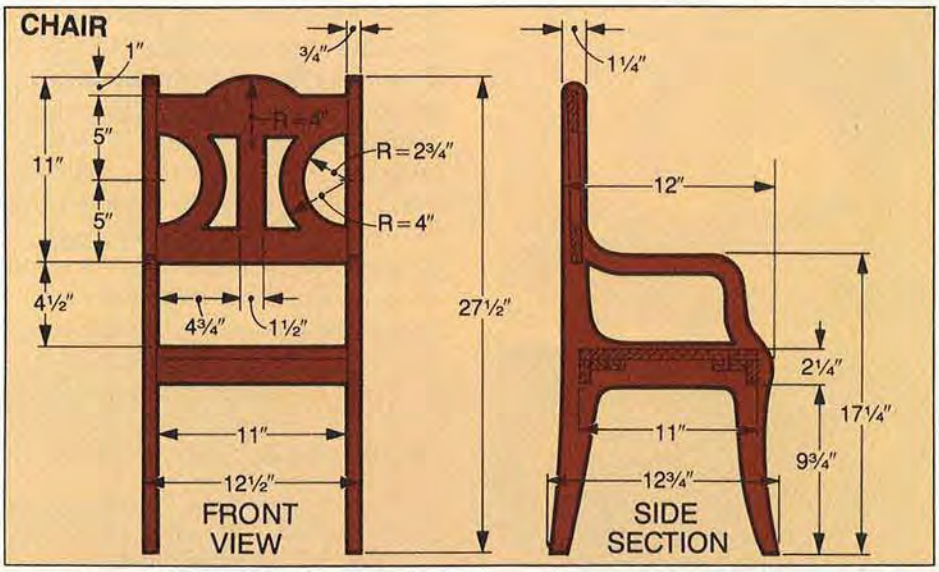


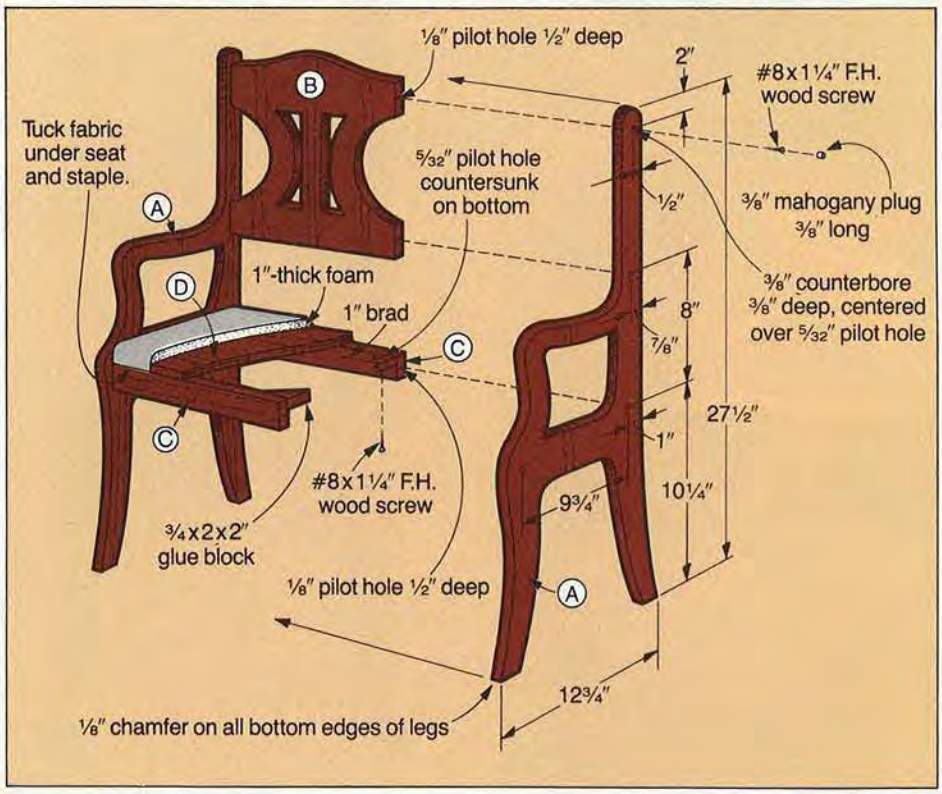
¾x48x48" Mahogany Plywood

Bill of Materials (FOR TWO CHAIRS)					
Part	Finished Size*			Material	Qty.
	T	W	L		
A*	¾"	12¾"	27½"	mahogany plywood	4
B	¾"	11"	11"	mahogany plywood	2
C	¾"	1½"	11"	mahogany plywood	4
D	¾"	11"	10⅞"	mahogany plywood	2

*Parts marked with a * are cut larger initially, then trimmed to finished size. Please read the instructions before cutting.

Supplies: #8x1¼" flathead wood screws, #8x1" flathead wood screws, 1" wire brads, wood filler, polyurethane-sanding sealer, stain, polyurethane, paste wax, #0000 steel wool, double-faced tape, heavy paper for grid patterns, 1" foam padding, 1 sq. yd. upholstery fabric

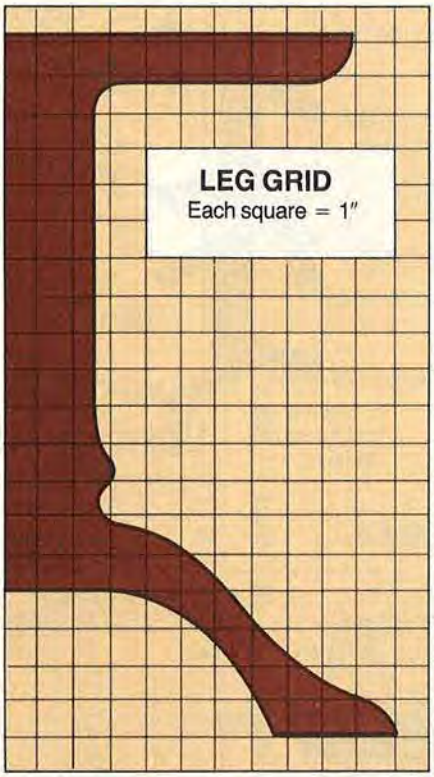




4 Back out the #8x1¼" rail mounting screws and apply glue to the stretcher and backrest ends. With the chair on a flat surface, screw the stretchers and backrest in position, checking the stretchers and backrest for square against the chair sides.
5 Using a ⅜" plug cutter, cut 16 plugs from solid mahogany stock planed down to 7/16". Glue a plug in place over each of the screws, matching the direction of the grain with the chair sides. When the glue dries, sand the plugs flush, being careful not to sand through the plywood veneer.
6 Cut the triangular glue blocks to the size indicated on the Exploded-View Drawing. Then, use glue and 1" brads to attach them to the chair frame flush with the top edges of the stretchers. Drill and countersink a 5/32" mounting hole on the bottom of the glue block.
7 Cut the chair seat (D) to the size listed in the Bill of Materials. (The seat measures ⅛" narrower than the completed chair frame to allow for the upholstery.) Then, use the seat as a template to cut a pad from 1"-thick foam. Now, cut two pieces of upholstery to 17x17", and staple the upholstery as shown in photo D, *below*.
8 Position the seat where shown in the Side-Section Drawing, *page 76*, and drill ⅛" pilot holes ½" deep, using the previously drilled holes in the glue blocks as guides.

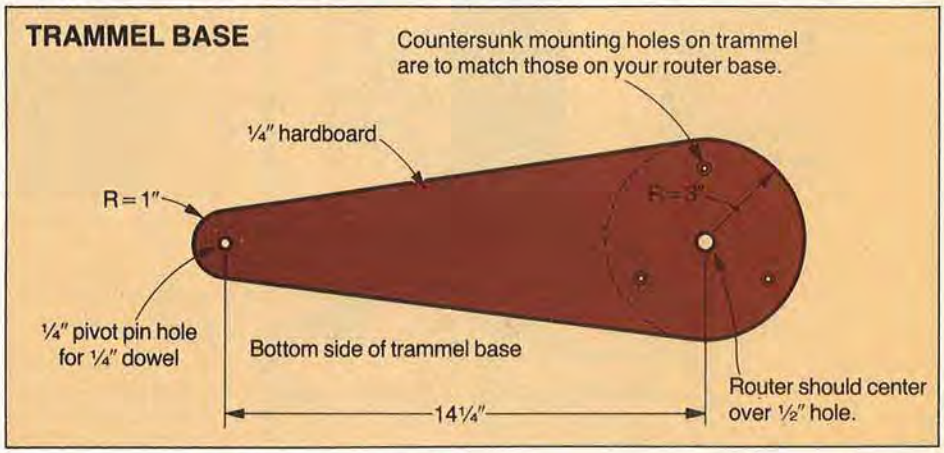
CONSTRUCTING THE TABLE

1 Cut two 22x19¼" plywood pieces for the table legs (E) as shown in the Cutting Diagram.
2 As you did with the chairs, lay out on paper a 1" grid pattern measuring 21x24". Mark the vertical centerline. Working from the right side of the centerline, transfer the half shape of the table leg to the grid (see the drawing, *below*).
3 Fold the grid paper along the centerline, and tape the top and bottom edges of the halves together. Cut out the pattern, remove the tape, and unfold the paper to yield a full-sized leg pattern.



4 Tape or use spray adhesive to secure the pattern in place, then trace the leg outline onto the plywood. Use a jigsaw to cut the leg to shape, cutting just *outside* the outline. Sand the edges smooth.
5 Using the first leg as a template, follow the procedure in steps 5 and 6, *page 75*, to form the second leg.
6 Lay out and mark a ¾" notch 7⅝" long on each of the legs where shown in the Exploded-View Drawing. Cut the notches with a jigsaw fitted with a fine-toothed blade. Sand the edges of the notches smooth. (We wrapped sandpaper around a flat scrap of wood to keep the notches straight when sanding.) Glue and clamp the assembly together, checking for square.
7 Cut a piece of ¾" plywood to 28½x28½" for the tabletop (F). Place the top with the best face down on a clean work surface, being careful not to scratch the veneer face. Mark diagonal lines from opposite corners of the top to locate the center. Drill a ¼" hole ½" deep at the center point, taking care not to drill through the tabletop (we used a stop on our drill bit to prevent drilling too deep).
8 From ¼" hardboard, construct a trammel base like the one shown and described in the drawing, *below*, for your router.

Continued


TRAMMEL BASE
Countersunk mounting holes on trammel are to match those on your router base.
¼" hardboard
R=1"
R=3"
¼" pivot pin hole for ¼" dowel
Bottom side of trammel base
14¼"
Router should center over ½" hole.

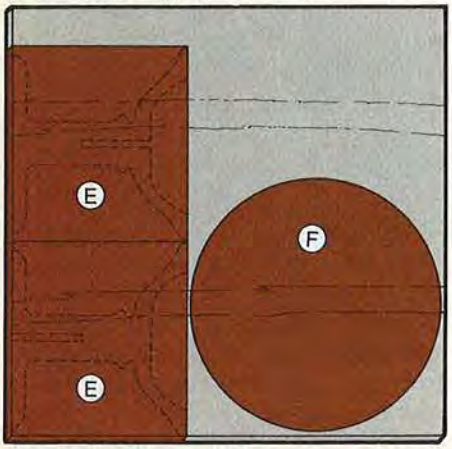
Tiny Table and Chairs

Bill of Materials (FOR ONE TABLE)					
Part	Finished Size* T	W	L	Material	Qty.
E*	¾"	22"	19¼"	mahogany plywood	2
F*	¾"	28" diam.		mahogany plywood	1

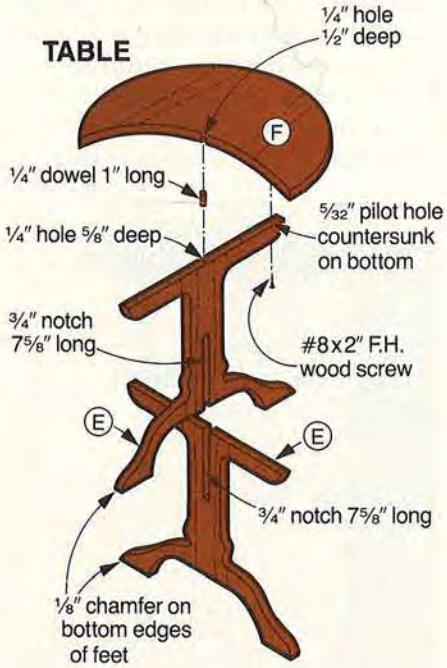
*Parts marked with a * are cut larger initially, then trimmed to finished size. Please read the instructions before cutting.

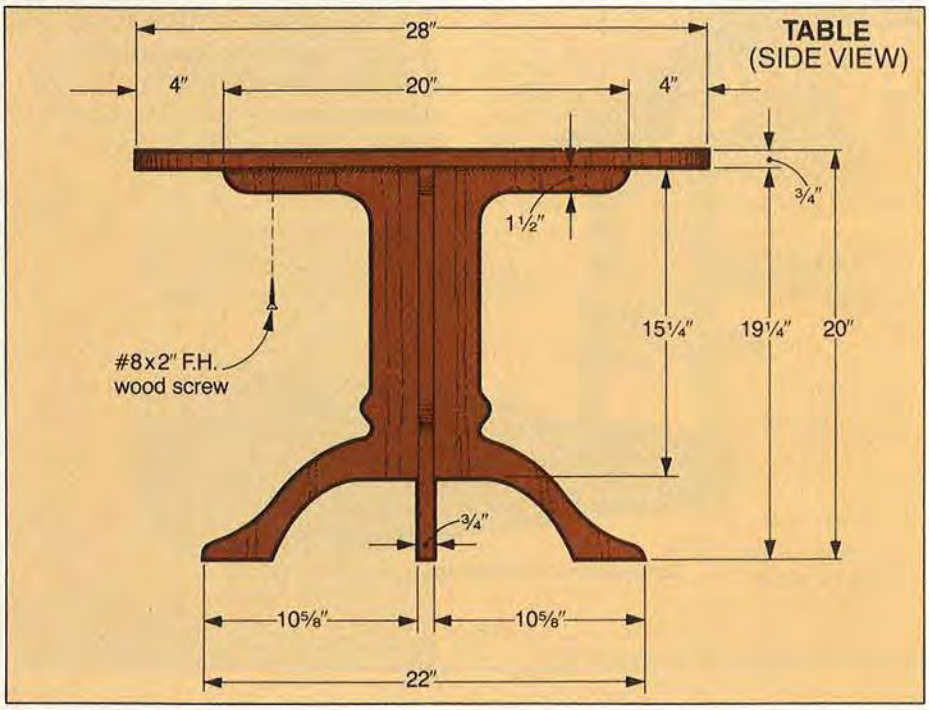
Supplies: #8x2" flathead wood screws, ¼" dowel, same finishing supplies as chairs.

Cutting Diagram (Table)



¾x48x48" Mahogany Plywood





9 Mount the trammel base on a ¼" dowel pin in the centered hole in the bottom of the tabletop. With a ½" straight bit, slowly rout the round tabletop as shown in photo E, *left*. Set the router to cut ¼" deep initially, followed by successively deeper passes (place a scrap piece of plywood below the tabletop blank to protect your workbench surface on the final pass).

10 Drill a ¼" hole ⅝" deep centered in the top of the leg assembly, then glue a ¼" dowel 1" long in the hole. Glue and clamp the top in place. With a 5/32" bit, drill, then countersink two holes in each leg where shown in the Exploded-View Drawing. Further secure the tabletop to the leg assembly with #8x2" screws.

THE PERFECT FINISH

1 Fill any voids or chips in the veneer with wood filler (we used mahogany-colored Fix Wood Patch). Finish-sand the chair frames and the table (we started with 150-grit and finished off with 220-grit sandpaper). Then, sand a very slight sandpaper break on all edges to prevent splintering. Using a sanding block, sand a ⅛" chamfer on the bottom edges of each chair leg and the feet of the table to prevent snagging carpets and rugs.

2 Stain the pieces. Apply two coats of polyurethane-sanding sealer, rubbing between coats with 220-grit abrasive.

3 Apply two coats of polyurethane finish, sanding lightly between coats. When the finish has dried, rub the pieces down with #0000 steel wool and paste wax. Put a final buff on the finish with a soft cloth. (We found that a piece of terrycloth mounted on a palm sander worked great.)

4 Screw the upholstered seats in place and deliver the furniture to its new owner.

Produced by Marlen Kemmet with Kerry Gibson
Photographs: Jim Kascoutas
Illustrations: Kim Downing

MAKE BEAUTIFUL RAISED PANEL DOORS . . . WITH YOUR ROUTER!

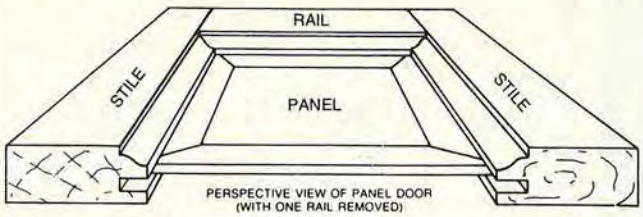
Professional production quality bit makes it quick and easy to produce matching rails and stiles — the panel raising bit with ball bearing guide makes the raised panel perfect every time.

Regular value over $180.00

SALE PRICE **$79.95** FOR COMPLETE SET

SAVE 55%

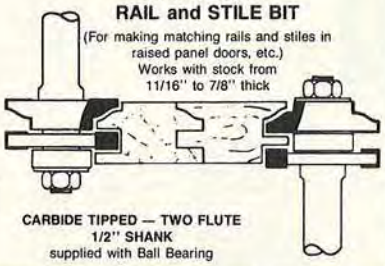
ORDER ITEM #154 (Includes all bits shown)



PERSPECTIVE VIEW OF PANEL DOOR (WITH ONE RAIL REMOVED)

RAISED PANEL BIT
SUPPLIED WITH BALL BEARING
1/2" SHANK
3-1/4" Large Diameter

REVERSIBLE COMBINATION RAIL and STILE BIT
(For making matching rails and stiles in raised panel doors, etc.)
Works with stock from 11/16" to 7/8" thick



CARBIDE TIPPED — TWO FLUTE
1/2" SHANK
supplied with Ball Bearing

To order by Master Charge or Visa Toll Free
7 Day — 24 Hour Order Service, Call
1-800-523-2445, Ext. 56 (in PA 1-800-346-7511, Ext. 56)
or send check to **MLCS, Ltd.,** P.O. Box 53D, Rydal, PA 19046

15" PLANER

SPECIAL SALE!

This high quality planer is the most sought-after machine in the country today. This is the machine that your neighbors (on both sides) probably already own!

Powerful 2 H.P. single phase motor, large 15 x 6" capacity, all ball-bearing 3 blade cutter-head, precision ground cast-iron bed and all around heavy duty construction — weighs 500 lbs.

Regularly priced at $795.00 + $100.00 shipping

NOW delivered anywhere in U.S.A.

For Only $825.00

(except Hawaii & Alaska)

A SPECTACULAR BUY!!

We use past customers as references. Get a first-hand un-biased report from a user and you will be 100% convinced of our quality & service.

Grizzly™

GRIZZLY IMPORTS INC.

P.O. BOX 2069, BELLINGHAM, WA 98227 • PHONE (206) 647-0801

The only thing small about this bandsaw is the price!

The new BS-3 Benchtop Bandsaw is BIG...BIG in capacity, performance, convenience *and* quality...yet it takes up just 1½' x 3' of bench space. Its built-in disc sander adds the BIG advantage of sanding right on the saw. BIG 15" throat. BIG 6¼" cutting depth. BIG quiet-running 3-speed motor has plenty of power for Wood, Metal or Plastic. BIG 16" x 18" worktable tilts up to 45°. This BIG 86 lb. Benchtop Bandsaw comes with a built-in vacuum hook-up, a BIG list of accessories (drum and belt sanding, and more) ...and BIG Buyer Protection. Call or write today. If you think that high quality has to mean high price ...you're in for a real surprise.

emco☆USA™

Dept. BW96B • 2080 Fairwood Ave.
P.O. Box 07795 • Columbus, OH 43207

1-800-521-8289
(In Ohio: 614/445-8382)

MAKITA • PORTER CABLE • ROCKWELL • BOSCH • LION

BLACK & DECKER • MILWAUKEE • FORSTNER • JORGENSEN • 3M • W.L. FULLER

MARPLES • RECORD • WATCO • NU-LIFE • DOWEL-IT-CLESCO • GILLESPIE • FREUD

HEGNER • STANLEY • GREENLEE • HENCKELS • MERIT

DELTA

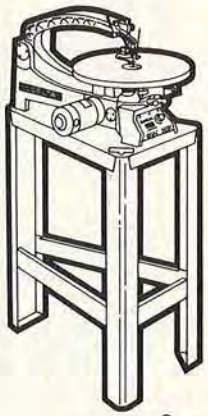
SPECIAL

40-601 Scroll Saw
$699.00 PPD.

43-371 Shaper
$1499.00 PPD.

Call today to place order for delivery. September-December, 1986.

Payment Must Be Made With Order.



• WRITE FOR NEW 1986 CATALOG
• VISA, MASTERCARD ACCEPTED

RYOBI TOOLS

		List	Sale
S500A	3x5½ Finish Sander	70	41
SU6200	Finishing Sand ½ Sheet	142	88
B7075	3x21" dustless Belt Sand.	179	116
B7100	3x24" dustless belt Sand.	208	140
B7200A	4x24" dustless Belt Sand.	269	165
D100VR	3/8" VSR 0-1200 rpm drill	91	49
W640	7¼" 13 amp circular saw	158	99
W740	8¼" 13 amp circular saw	171	109
JS60	Jig Saw-Single Speed	172	99
JSE60	Jig Saw-electronic v/speed	198	123
R150	1 H.P. Plunge Router	138	86
R330	2 H.P. Router	220	138
R500	3 H.P. Router	265	163
E3800	Drywall screwdriver 0-4000	126	79
L120U	3½" Planer	142	89
BD1020R	3/8" 2-spd Cordless Drill w/free holster-Xtra special buy	148	95
TS251U	10" Mitre Box	300	169
SG1150C	4½" H.D. Mini-Grinder	99	59

YOUR ATTENTION PLEASE!

All Above RYOBI TOOL Prices

Take Additional 10% OFF Sale Prices

MILWAUKEE TOOLS

		List	Sale
0224-1	3/8 drill 4.5A magnum	159	109
0234-1	½ drill 4.5A magnum	159	112
0244-1	½ drill 4.5A magnum	159	115
0222-1	3/8 drill 3.3A 0-100 rpm	146	99
0228-1	3/8 drill 3.3A 0-1000 rpm	129	92
0375-1	3/8 close quarter drill — NEW — 3.5 amp	175	118
0210-1	3/8 cordless drill — NEW — 2 speed	154	95
6539-1	cordless screwdriver — NEW — 190 RPM	84	59
1007-1	½" drill 4.5A D-Hdle	199	145
1107-1	½" drill 4.5A D-Hdle	204	145
3300-1	magnum rt angle drive kit	249	170
3102-1	Plmbrs rt angle drill kit	263	180
1676-1	HD Hole Hawg w/cse 2 sp	333	235
5395	3/8 sgle sp hammer drill kt	203	150
5397	3/8 var sp hammer drill kit	208	155
5371-1	HD mag. hammer drill ½"	287	207
5373	HD mag. ham. drill 3/8"	240	175
6511	2 speed Sawzall w/case	181	122
6226	port band saw 2 sp w/case	382	280
6234	TSC band saw port w/case	382	280
6405	8¼" circ. saw 13 amp	179	127
6460	10¼" " 15 amp w/case	349	245
6165	12" Chop saw 15 amp 4200 R.P.M.	285	189
6255	v/sp Jig Saw 3.8 amp	199	140
6245	sgle sp Jig Saw 3.8 amp	175	125
6012	⅓ sheet HD Orb. sander	159	110
6014	½ sheet HD orb. sander	169	112
5660	1½ HP router 10 amp	265	175
5680	2 HP router 12 amp	314	220

DRYWALL SHOOTERS

6753-1	3.5 amp 0-4000 rpm **new**	115	79
6747-1	4.5 amp 2500 rpm	144	100
6750-1	4.5 amp 0-4000 rpm	129	90

NEW FROM RYOBI

MODEL AP-10 — 10" Surface Planer

WEIGHS ONLY 58 LBS.

LIST 659.00 — SALE 375.00

MILWAUKEE Super Specials!

★ BRAND NEW ★

Model 0212-1 Cordless Variable Speed 3/8" Drill

LIST. . .179.00 SALE. . .125.00

Model 6145 — 4 1/2" Sander-Grinder

LIST. . .139.00 SPECIAL SALE. . .85.00

Go Cordless with MILWAUKEE

#6305 — 6¼" Cordless Circular Saw

12 volt — 1 Hour Charge

Cuts (80) 2x4's (Pine)

List Price 195.00 ★ SALE PRICE 119.00

FREUD SAW BLADES

Univ. Bore — Professional Series

CARBIDE TIPPED SAWBLADES

Item No.	Description	Diam.	Teeth	List	Sale
PS203	Gen'l Purp.	7½"	24	27.24	17.50
PS303	Fine cutting	7¼"	40	32.97	20.50

5/8" Bore — Industrial Grade

CARBIDE TIPPED SAWBLADES

Item No.	Description	Diam.	Teeth	List	Sale
LU72M010	Gen-l Purp.	10"	40	68.58	34
LU81M010	Gen-l Purp.	10"	60	69.30	35
LU73M010	Cut-Off	10"	60	79.65	36
LU82M010	Cut-Off	10"	80	86.40	44
LU84M010	Combination	10"	40	70.99	36
LU84M011	Combination	10"	50	74.51	37
LU85M010	Super Cut-Off	10"	80	110.88	62
LM72M010	Ripping	10"	24	64.85	34
DS 306	6" Dado			139.00	92
DS 308	8" Dado			170.00	105
TR 100	3 blades & Dado set			399.00	255

MAKITA CORDLESS FESTIVAL OF VALUES

Model		List	Sale
4300DW	Jig Saw	158	99
5081DW	3⅜ Saw Kit	174	95
5600DW	6¼" Circular Saw	224	125
9035DW	Finishing Sander	128	73
6010DWK	3/8" Cordless Drill Kit	152	88
6010SDW	3/8" Cordless Drill	84	45
8400DW	3/8" Hammer Drill	188	105
DA3000DW	3/8" Angle Drill	176	98
6010DL	3/8" Drill w/Flashlight	162	89
6012HDW	3/8" 2 spd Driver Drill w/Bat & Metal Case	178	98
DK1002	3/8" Drill w/Flursnt Lt	164	90
6710DW	Cordless Screwdrvr Kit	148	84

DELTA BENCH TOP TOOLS

Model		List	Sale
11-950	8" Bench Drill Press	124	100
28-160	10" Bench Band Saw	158	125
40-500	15" Scroll Saw	105	85
23-680	6" Grinder Bench	62	50
23-880	8" Grinder Bench	99	85

MAKITA TOOLS

		List	Sale
BO4510	Sander	79	43
9900B	3"x 21" belt sander	198	119
9924B	3"x 24" belt sander	189	130
9924DB	3"x 24" b/sand. w/bag	214	130
9035	⅓ sheet finish sander	79	48
9045B	½ sheet finish sander	156	90
9045N	¼ sht fin. sand. w/bag	158	105
4200N	4⅜ circ. saw 7.5 amp	152	93
5008NB	8¼ circ. saw 13 amp	178	105
5201NA	10¼ circ. saw 12 amp	348	215
4300BV	v/sp jig saw 3.5 amp	192	120
4301BV	orb v/sp jig saw 3.5 amp	208	125
JR3000WL	2 sp recip saw w/cse	168	120
JR3000V	vs recip saw w/case	178	120

★ ★ ★ MAKITA TOOLS ★ ★ ★

SPECIAL PROMOTION

LS1000	New 10" Mitre Box	348	198
792210-7A	Carbide Bld for above	45	31
9820-2	Blade Sharpener	244	159
741074-9	60 (coarse) Grdg Whl	33	23
741070-7	1000 (med) Grdg Whl	30	22
741071-5	6000 (fine) Grdg Whl	43	30

1900BW	3¼" planer w/case	154	92
1100HD	3¼" planer w/case	278	160
3608BK	¾ hp router w/case	132	85
3601B	1⅜ hp router	168	115
3700B	½ hp trimmer 28,000 rpm	124	82
BO4530	6" Round Sander	84	48
DA3000	3/8" angle drill	158	105
DP4700	½ v/sp w/rev" 4.8 amp	154	92
HP1030W	3/8 v.s.r. hammer drill w/case	145	98
6300LR	½" angle drill w/rev	229	152
84198B-2W	½" s sp. hammer drill w/case	238	150
GV5000	Disc Sander	79	53
6800DB	2500 rpm 3.5 amp	123	79
6800DBV	0-2500 rpm 3.5 amp	133	89
6801DB	4000 rpm 3.5 amp	123	79
6801DBV	0-4000 rpm 3.5	133	89
2030n	12" planer/jointer	2160	1475
2040	15⅝" planer	1780	1195
1805B	6⅛" planer kit w/case	416	265
JV1600	var. speed jig saw	145	89
JV2000	var. speed orb. jig saw	165	100
5005BA	5½" circular saw 8 amp. with brake	154	98
9207SPC	7" var/speed electronic sander/polisher	209	130
9303BH	4½" sander-grinder kit	146	95
4014NV	var/speed blower	128	79

DOWL JIGS

MODEL	DOWL-IT	List	Sale
1000		32.95	23.95
2000		42.95	32.95

RECORD VICES

52D	7" jaw - 8" Opening	69.00	51.00
52½D	9" Jaw - 13" Opening	92.00	76.00

3M Co. Respirators

#8500	Box of 50 - 10.00-Case of 600	89.00
#8560	Box of 15 - 13.50-Case of 180	135.00

buying from Seven Corners Hdw. . . . is a good Rule to follow.

Model		STANLEY	List	Sale
33-116	PL-316	¾" x16' Rule	15.95	7.50
33-320	PL-320	¾" x 20C Rule	16.95	7.95
33-425	PL-425	1" x 25' Rule	18.95	8.95
33-430	PL-430	1" x 30' Rule	20.95	9.95

1986 TOOL CATALOG AVAILABLE

Call Toll-Free 1-800-328-0457 — In Minnesota Call (612) 224-4859

4 WAYS TO BUY: CHECK — MONEY ORDER — VISA — MASTERCARD

SEVEN CORNERS ACE HDW. Inc.

216 West 7th St. • St. Paul, MN 55102 • Est. 1933

SAW-ATHON by PORTER CABLE

#314	4½" Trim Saw	
List 180		SALE 109
#346-1	6½" Top Hdle	
List 161		SALE 100
#617	7¼" Push Hdle	
List 166		SALE 96
#587	7¼" Speedtronic	
List 199		SALE 125
#315-1	7¼" Top Hdle	
List 166		SALE 96
#368-1	8¼" Top Hdle	
List 176		SALE 110

BELT SANDERS by PORTER CABLE

#363 — 4"x 24" w/o Bag
List - 280 Sale - 185

#362 — 4" x 24" w/Bag
List - 295 Sale -198

#503 — 3" x 24" w/Bag
List - 510 Sale - 350

DELTA

#34-410 — 10" CONTRACTORS SAW w/Stand & 1½ H.P. Motor

SPECIAL PRICE 679.00

FACTORY REBATE. 100.00

579.00

FREE DELIVERY TO 48 STATES

TOOLS ON SALE™

AMERICA'S LOWEST PRICED TOOLS

★ PLUS — FREE FREIGHT ★

ON EVERY ITEM

SUPER CORDLESS SPECIALS from BLACK & DECKER

Model	DRILL KITS	List	Sale
1930	3/8" rev/hi speed	165	110
1950	3/8" High Torque	165	110
5930	Reversible Hammer	179	120
1970	3/8 rev/hi torque screwdriver	179	120
1980	Rev/adj. clutch Scrudrill	179	120

BRAND NEW! SUPER SPECIALS from MILWAUKEE

0214-1	3/8" c/less drive/drill	159	109
8975	H.D. heat Gun, 11.6A Low 570°F - High 1000°F	74	49
5920	belt sander 3x24 w/o bag	289	199
5925	belt sander 3x24 w/bag	309	215
5930	belt sander 4x24 w/o bag	299	209
5935	belt sander 4x24 w/bag	319	214

PORTER-CABLE = NEW ITEMS +

Model		List	Sale
655	Drywall Driver 0-4000 Rev	115	85
367	3¼" Plane 6.5A	170	115
5009	Mortise & Tenon Jig	50	34
351	3" x21" Belt Sander	189	125
352	3" x21" Belt Sndr w/bag	199	135
9810	Cordless Screwdrvr kit	175	115
320	Abrasibe Plane 3A	129	91

★ ★ ROUTER RIOT ★ ★ by PORTER-CABLE

Model		List	Sale
100	7/7 H.P. 6.5 amp	141	98
630	1 H.P. 6.8 amp	150	100
690	1½ H.P. 8 amp	194	130
691	1½ H.P. D-Hdle 8 amp	218	145
536	1½ H.P. Speedmatic Double Handle	300	190
537	1½ H.P. Speedmatic Double Handle	315	215
520	3 H.P. Production	460	270
518	3 H.P. Micropressor 5-sp	490	345
	TRIMMERS BY PORTER-CABLE		
309	3.8 amp laminate trimmer	130	90
310	3.8 amp laminate trimmer	190	135
312	offset base laminate trim	205	140
319	tilt-base laminate trim	215	150

★ X-TRA SPECIALS ★

	MAKITA TOOLS	List	Sale
6010DL	C/less Drill w/flashlight-charger & case	162	90
DP3720	3/8 drill Rev. 0-1800 rpm	90	47
6510LVR	3/8 drill Rev. 0-1500 rpm	116	67
6013BR	½" Drill rev. 6 amp	174	100
5402A	16" Circular Saw-12 amp	468	315
2414	14" Cut Off Saw-13 amp	282	169
3612BR	3 HP Plunge Router	286	175
9401	4x24 belt Sander w/bag	248	160

	PORTER-CABLE	List	Sale
696	H.D. Shaper Table	150	105
695	H.D. 1½ hp Router/Shaper	278	190
399	Drywall Cut-Out Unit	100	70
736	V/Speed *Speedtronic* Band Saw	450	330
7564	½" X.H.D. Drill 8 amp	205	145

	BOSCH TOOLS	List	Sale
1581VS	Top Handle Jig Saw	225	126
1582VS	Barrel Grip Jig Saw	126	118
1604	1¾ H.P. Router	199	118
1942	Heat Gun 650°-900°	99	85
1272	3x24" Belt Sander	259	159
1272D	3x24" Belt Sander w/bag	274	169
1273	4x24" Belt Sander	274	169
1273D	4x24 Belt Sander w/bag	289	179

DELTA

		List	Sale
34-010	Motorized Mitre-Box	231	149

★ NEW LOW PRICES ★ PONY CLAMP FIXTURES

Model		List	Sale	Lots of 12
#50	for ¾" Black Pipe	11.23	7.15	79.00
#52	for ½" Black Pipe	9.36	6.10	67.50

JORGENSEN HAND SCREWS

Model	Jaw Length	Open Cap.	List	Sale	Box of 6
#5/0	4"	2"	11.59	7.25	39.15
#4/0	5"	2½"	12.45	8.10	43.75
#3/0	6"	3"	13.36	8.50	45.95
#2/0	7"	3½"	14.36	8.95	48.35
#0	8"	4½"	15.97	9.95	53.75
#1	10"	6"	18.25	11.35	61.25
#2	12"	8½"	20.94	13.60	72.95
#3	14"	10"	26.56	16.75	91.35
#4	16"	12"	34.55	23.75	128.25

JORGENSEN BAR CLAMPS STYLE 37 — 2½" Throat ¼" x ¾"

Model	Jaw Length	List	Sale	Lots of 6
#3706	6"	7.88	5.50	29.70
#3712	12"	8.73	5.95	32.13
#3718	18"	9.64	6.95	37.53
#3724	24"	10.54	7.35	39.69
#3730	30"	11.76	8.25	44.55
#3736	36"	12.85	8.95	48.33

Who Has The Saws That Cut It Across The Board?

BLACK & DECKER of course!!!

Model	WORM DRIVE SAWS	List	Sale
3050	6½" 12 amp - 4600 rpm	247	169
3051	7¼" 13 amp - 4300 rpm	232	149
3052	8¼" 13 amp - 4300 rpm	247	169
	SUPER SAWCATS		
3047-09	7¼" w/brake - 12.5 amp	226	149
3048-09	8¼" w/brake - 13 amp	240	155
	BUILDERS SAW CAT		
3030	7¼" 13 amp - 5800 rpm	155	100
3035	8¼" 13 amp - 5800 rpm	175	125
3034	7¼" 13 amp - 5800 rpm	162	115
3033	6½" 13 amp - 5800 rpm	162	115
	JIG SAWS		
3157-10	var/sp orb action d/hdl	174	115
3153-10	var/speed 4.5A 0-3100	158	105
3159-10	2/sp orb action barrel grip	178	120
	CUT SAW KITS		
3103	2 sp 6 amp-2400 strokes	163	100
3105	v/sp 6 amp-2300 strokes	170	110
3107	v/sp orb 6A 0-2300 strokes	183	119
4300	Drill Bit Sharpener	289	205
1321	½" drill 450 rpm 6 amp	175	115
4010	Palm Sander	80	48
4015	½ Sheet Finish Sander	160	105
	DRYWALL GUNS		
2034	v.s.r. 0-4000 rpm	121	79
2037	v.s.r 0-4000 rpm	139	89

"Door Openers" from MAKITA

9501B	4" Grinder Kit	119	55
2708	8¼" Table Saw	348	199
5007NB	7¼" Circ. Saw	158	94

MILWAUKEE BUY OF THE YEAR

Model 6365 — 7¼" Circular Saw

List $159.00 Sale $99.00

Lots of 3 — $289.00

***Brand New* • PORTER CABLE**

Model 7548 Top Hdle Jig Saw

LIST 199 — SALE 129.95

Model 7648 Barrel Jig Saw

LIST 199 — SALE 129.95

PORTER-CABLE

		List	Sale
9548	HD v/s bayonet saw w/case	255	169
9627	2 sp. tiger saw kit 8 amp	193	130
9629	V/sp. tiger saw kit 8 amp	204	135
505	H.D. ½ sheet finish/sander	175	100
330	spd bloc sander ¼ sheet sz	87	54
304	Professional 7" disc sander	169	120
305	Professional 7" polisher	169	120
7511	3/8" xtrahvy v/s drill 5.2 amp	164	115
7554	½" xtra hvy drill 8 amp	210	150
9652	Versa-Plane Kit	419	285
9118	Porta Plane Kit	289	190
	DRYWALL SHOOTERS		
7544	5.2 amp — 2500 rpm	158	105
7545	5.2 amp — 0-2500 rpm	158	105

AEG POWER TOOLS

Model		List	Sale
EZ 501	C/less Scrwdrvr **Brand New**	59	35
EZ 502	C/less Scrwdrvr-190 rpm	98	52
EZ 505	C/less Drill/Driver	139	79
EZ 506	C/less Electronic Dril/Drvr	159	94
EZ 581	C/less Caulk Gun var/sp	179	106
SCR1E	Drywall Screwgun 0-2000	125	74
SCR11E	Drywall Screwgun 0-4000	125	74
BE8RL	3/8" var/sp drill 3.8 amp rev	86	51
BE10RL	3/8" var/sp drill 5 amp rev	125	74
SBE401RL	3/8" Ham Drill v/sp h.d	88	52
SE2E13RL	½" Ham Drill 2 sp h.d	169	101
TC25E	Tech Driver v/sp 5 amp	150	89
PC70	7¼" Circular Saw 12 amp	157	93
VS130	Orb Sndr 20,000 OPM 1/3 sh	75	48
VS260	Orb Sndr 25,000 OPM ½ sh	156	88
VSS260	Orb Sndr 25,000 OPM w/bag	189	118
Hbse75S	Belt Sander v/sp 3" x 21"	199	118
BSPE60	Jig Saw Orb v/sp 4.6A w/case	214	127
RSK600	Recip Orb Saw 10 amp	229	136

ROTARY HAMMERS

PHE 16RL	3.8 amp 5/8" capacity in concrete	269	175
PH 210	5.2 amp ¾" capacity in concrete	398	260
PHE 20	Same as above — except var/sp 0-750	418	270
PHD 26	6.3 amp 1" capacity in concrete	495	320
PH 38	7.5 amp 1½" capacity in concrete	549	355

All above complete with cases

SKIL TOOLS

		List	Sale
551	5½" Circ. saw 6.5A	99	73
77	7¼" Worm Saw	240	135
367	6½" Worm Saw	239	135
825	8¼" Worm Saw	270	165
807	7¼" Skilsaw 13A-Super	153	100
808	8¼" Skilsaw 13A-Super	172	110
2016-02	3/8" Cordless Drill complete W/Charger, Case & 2 batteries	199	95

DRUM-SANDING TABLE

Continued from page 53

HOW TO USE THE DRUM-SANDING TABLE FOR EDGE-SANDING

Fasten the drum-sanding table to your drill-press table with the machine screws, washers and wing nuts. Then, chuck a 3x3″ sanding drum in the drill-press chuck. Use a straightedge to align the edge of the sanding drum with the *outfeed* side of the fence. Once the fence is in position, clamp it to the drum-sanding table. Attach the vacuum hose to the vacuum-hose adapter and start the vacuum and drill press. Feed the stock along the *infeed* side of the fence in the direction noted in the Exploded-View Drawing. The stock will come in contact with the sanding drum and have 1/32″ sanded off when it reaches the outfeed side of the fence.

BUYING GUIDE

- **Vacuum-hose adapter.** (Called a "flange ferrule" by Shopsmith.) 2¼″ interior, 2½″ exterior diameter, stock #AE-0135. Sold in sets of four. $10 plus $4 shipping and handling. Shopsmith, Inc., 6640 Poe Ave., Dayton, OH 45414, or phone toll-free 800/543-7586.
- **3″ sanding drum.** 3x3″, ⅜″ shank, catalog #129-010, $21.50. Abrasive sleeves for 3x3″ drum, 120-grit, catalog #129-040, $1.45 each. Woodworker's Supply of New Mexico, 5604 Alameda Pl. N.E., Albuquerque, NM 87113, or call 800/645-9292 to order.
- **Drum-sander kit.** Kit includes four drums: 2x1½″, 1½x1½″, 1x1″, ½x1″. All ¼″ shanks. Sixteen assorted sleeves in 50, 80, and 120 grit. Catalog #500-1640, $11.95. The Fine Tool Shops, Inc., P.O. Box 1262, 20 Backus Avenue, Danbury, CT 06810, or call 800/243-1037 to order.

Project Design: Gary Hood
Photographs: Hopkins Associates
Illustrations: Randall Foshee; Bill Zaun

This VET Did It – and YOU Can Do It Too!

"War injuries left me badly handicapped, but now I'm a financial success as a Locksmith, thanks to your training. Besides, the work is fascinating. If I can do it anybody can." — Glen Johnson, Larned, Kan.

Make Up to $26.00 an Hour — even while learning!

Train FAST at Home! **Be a LOCKSMITH!**

If you enjoy fixing things, you're a "natural" to make hundreds of EXTRA DOLLARS a year in the fascinating business of Locksmithing. Rising crime has increased demand for service a thousandfold. **Yet there's only one Locksmith for every 17,000 people!**

COLLECT CASH PROFITS ALMOST AT ONCE!

You're "in business" ready to make $10 to $26.00 an hour a few days after you begin Foley-Belsaw's shortcut training. Easy illustrated lessons complete with ALL practice equipment **PLUS**

- **ALL TOOLS YOURS TO KEEP**
- **KEY MACHINE YOURS TO KEEP**
- **EXPERT PERSONAL ASSISTANCE**
- **BUSINESS-BUILDING HELP**

MAIL COUPON to discover how Locksmithing can keep the extra money coming in during spare time — or in your own full-time business. Ideal for retirement—good jobs, too.

FOLEY-BELSAW INSTITUTE, 10976 Field Bldg. Kansas City, Mo. 64111

N. Hunt, Wilmington, Del.—"I make $50 a week extra."

R. Davis, St. Louis, Mo.—"I cleared $110 last Saturday."

Ed Boyle, Pittsburgh, Pa.—"My business going at top speed. I'm moving to bigger quarters."

FREE

MAIL THIS COUPON • NO SALESMAN WILL CALL

THIS DO-ALL PRO **KEY MACHINE YOURS TO KEEP!**

FREE

Can add $50 to $100 a week to your income . . . and doesn't cost you a penny extra!

FOLEY-BELSAW INSTITUTE, 10976 Field Bldg. Kansas City, Mo. 64111

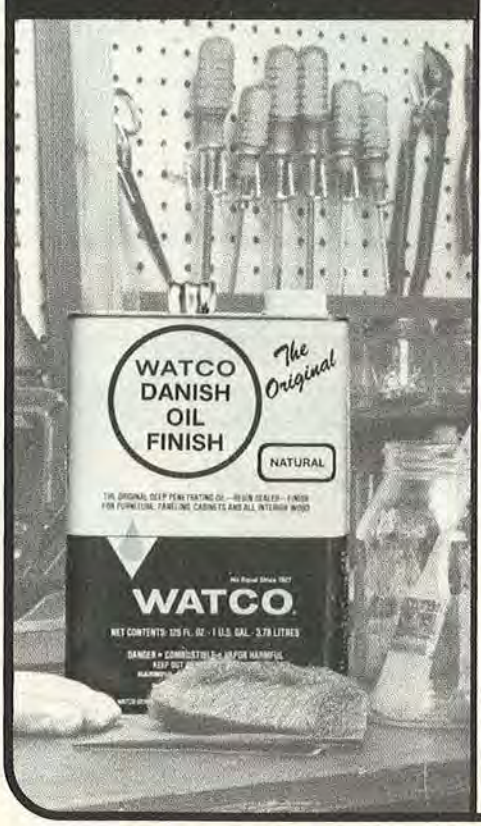
Rush **FREE** book, "Keys to your Future."

Name_____

Address_____

City_____ State_____ Zip_____

The workbench companion



WATCO®

The Original and Still the Best

DANISH OIL FINISH

Watco Danish Oil Finish can be your ideal workbench companion for all those wood finishing projects around the house. You'll be amazed at how easy it is to finish wood beautifully with Watco, "The Original Danish Oil". Watco gives wood that natural, hand-rubbed look with long-lasting durability. And because Watco is **IN** the wood. . . not on it like temporary surface coatings. . . there is no finish that will wear off. Watco Danish Oil is ideal for furniture, paneling, cabinets, doors, trimwork and even antiques. It's also safe for use on butcher blocks, cutting boards, and children's toys after Watco dries and cures in the wood. Choose from 8 beautiful finishes . . . Natural and Medium, Dark, and Black Walnut shades, and Cherry, Golden Oak, Fruitwood, and English Oak colors.

Send today for **"Free"** color booklet **"How to Finish Wood Beautifully and Easily"** and the name of your nearest Watco distributor.

WATCO-DENNIS CORP., 1756 22nd St. Santa Monica, CA 90404, Dept. BH-W106

Name_____

Street_____

City_____

State_____ Zip_____

BOSCH Power Tools

Jig saws only $126.00

Model 1581VS

NO.	TOOL	SALE
1582VS	Orbit. Action Neb Hdle Jig Saw	$118.00
3238VS	Unv. Shank Mult. Orbit. Jig Saw	83.00
1601	1 hp Router	104.00
1602	1½ hp Router	129.00
1604	1¾ hp Router	118.00
1606	D-Handle, 1¾ hp Router	163.00
90300	Fixed Base Router, 3¼ hp	350.00
90303	Plunge Base Router, 3½ hp	472.50
90085	¾ hp Router	91.00
3270D	3x21 Dustless Belt Sander	122.00
1272	3"x24" Belt Sander	159.00
1272D	3"x24" Belt Sander w/Dust Collector	169.00
1273	4"x24" Belt Sander	169.00
1273D	4"x24" Belt Sander w/Dust Collector	179.00
1921VSRK	3/8" Var. Spd. Screwdriver	$129.00
1920VSRK	3/8" Cordless Reversing Drill	99.00
1920RK	3/8" Cordless Reversing Drill	85.00
3268	Heat Gun	48.00
1158VSR	3/8" Var. Spd. Rev. Drill	54.00
1651	New Bosch 7¼" Cir. Saw, 13 amp	99.00

HITACHI

F1000A	Planer Jointer	1275.00

CALL TOLL FREE 1-800-525-0750
In Colorado 1-800-523-6285
Denver 355-2391

VISA and MASTERCARD ACCEPTED

AVIATION/INDUSTRIAL SUPPLY
P.O. Box 39159 • Denver, CO 80238
TOOLS FREIGHT PAID

BAND SAW BLADE SPECIALISTS

Jet JBS-14 Woodworking Bandsaw 6" x 14" Capacity

Standard Equipment:

- ¾ HP Motor
- 3 Speed Pully System
- 45° Square Tilting Table
- Mitre Gauge
- ⅛" to ¾" Blade Capacity
- Stand Included

$398.00
FOB: Factory

SPECIAL OFFER
Buy Six Blades, Get One Free
Band saw blades cut and welded to your exact specifications

WIDTH	TEETH	PRICE/INCH
⅛" thru ¾"	3 thru 32	$.04

Price=inch length x price per inch+1.75 weld charge
NO MINIMUM OFFER
Speedy Delivery
Add $2.50 for shipping & handling
S.C. residents add 5% sales tax
Send payment with order—write or call

ROBERTS HARDWARE
P.O. Box 1276 • Taylors, SC 29687
803/879-2470

MORTISE & TENON JOINERY

TWO VARIATIONS ON THE MORTISE AND TENON THEME

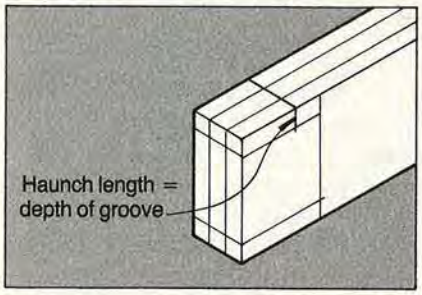
Print this article

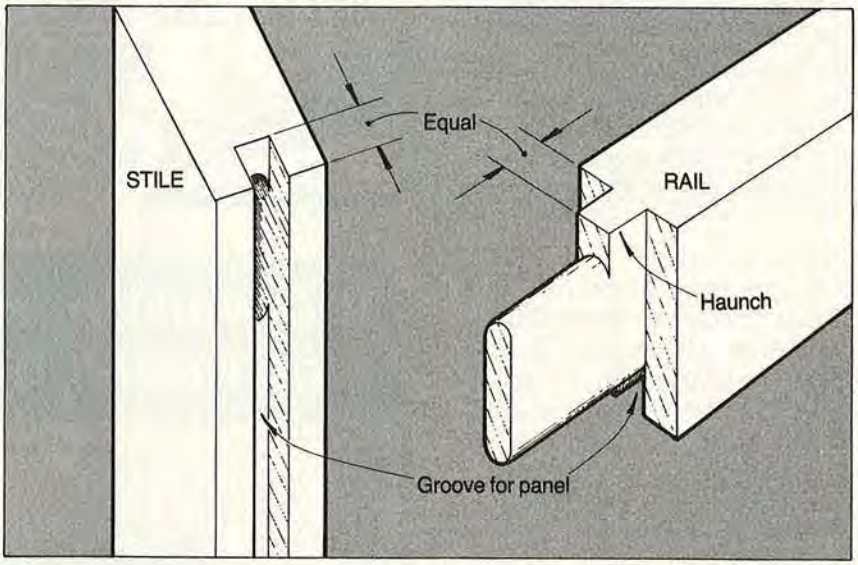
Raised-panel door and table and chair joints each call for a slightly different layout strategy.

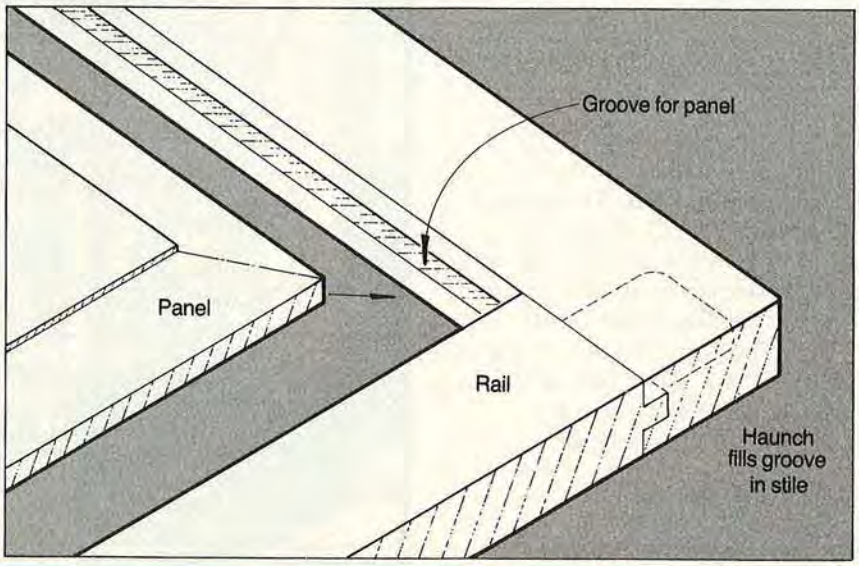
THE HAUNCHED MORTISE AND TENON

When building raised-panel doors, it's common practice among woodworkers to cut a groove along the inside edge of each frame member to accept the panel. When faced with this situation, you need to create a haunch, or lip, on the tenon to fill the void created by the groove.

To do this, start by laying out the borders of the tenon as explained on page 38. Then, measure the depth of the groove in the frame, and lay out the haunch where shown in the detail drawing below. Remember that the length of the haunch equals the depth of the groove. Cut away the material only back to this line, and you will have created the haunch you need.





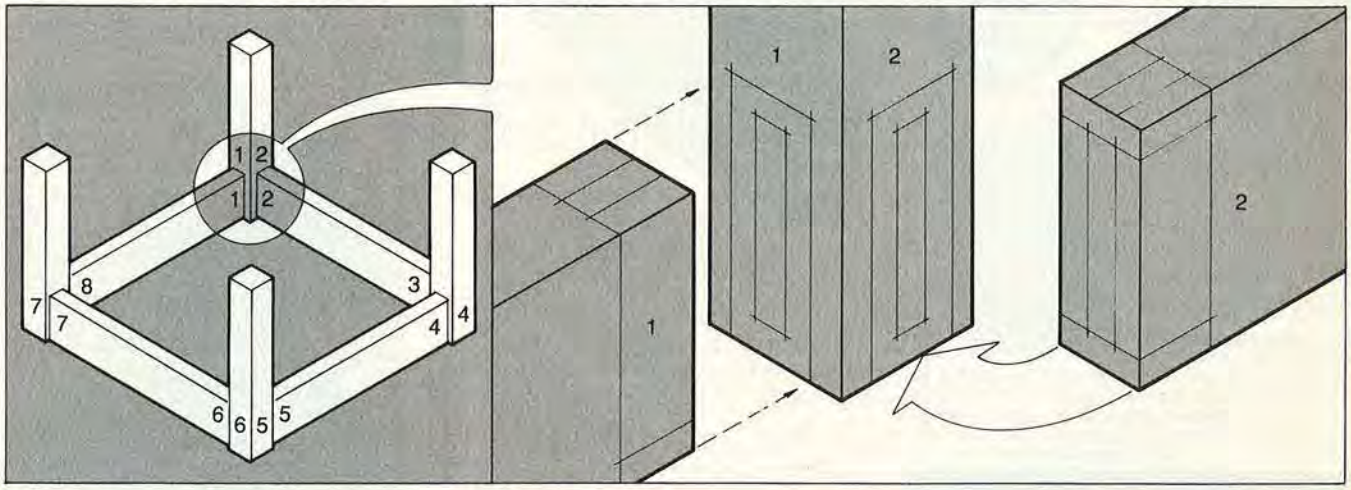


THE MORTISE AND TENON WITH REVEAL

Lots of experienced woodworkers favor the mortise and tenon joint when joining the legs and aprons of tables (and for the legs and rails of chairs) because of its great strength. When laying out the location of the mortises on the legs, you must first decide how much of a reveal (or setback) suits you. Aprons typically set back about ⅛" from the outside edge of the legs.

Then, in the case of a table, lay out the legs and aprons as shown in the detail below, number each of the joints for easy identification, carefully mark the outline of the aprons on the legs, and layout the mortises and tenons as instructed on page 38.

When laying out a leg/rail joint for a chair, you follow pretty much the same procedures. However, you will have to clamp the legs and rails together when marking the outline of the rails on the legs.



KILN DRY YOUR OWN LUMBER

nyle corporation

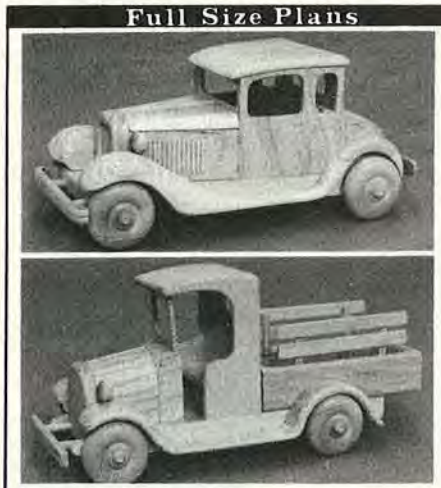
the nation's largest manufacturer of dehumidification dry kilns is now offering small 500 to 10,000 board feet drying systems.

★ Made completely in the USA
★ The leader of the industry
★ Offering excellent warrantees
★ Expert consultation and service

nyle DRY KILN SYSTEMS

Box 1107-A, Bangor, Maine 04401
Telephone 1-800-648-9200
or 207-989-4335

Full Size Plans



Build these two great **Fords.** The Model A is 11". The Pickup is 12". Two plans per set. **Plan No. 18006....$8.50** Catalog $1.00 or free with order. Visa/MC (516) 462-6228

ARMOR, Dept. L, Box 445, E. Northport, NY 11731

POWER TOOLS SAVE $50 TO $500

METAL PARTS KITS AT LOW FACTORY DISCOUNT PRICES FOR

- 12-IN. BAND SAW
- 18-IN. BAND SAW
- WOOD SHAPER
- 6-IN. BELT SANDER
- 10-IN. TILT/ARBOR SAW
- LATHE/DRILL PRESS COMB.

$5.00 per Plan

KITS FROM $34.99 TO $189.99

Easy to follow step-by-step plans. Photos. No machining, no welding. Build your own sturdy frame. Full scale patterns. 98,000 kits sold. Send $6 for plans, brochure and prices or $1 for brochure and prices. Order kits on Visa or MasterCard.

GILLIOM MFG., INC. MONEY BACK GUARANTEE
1700 Scherer Pkwy. Dept. BHW609
St. Charles, Mo. 63303 Phone (314) 724-1812

WOODWORKERS

STUD SENSOR™

The Amazing New Device That Sees Through Walls Electronically

SALE $19.95 ppd

- NOT magnetic–does not detect nails.
- Senses wall density to detect wood studs.

FREE CATALOG SUBSCRIPTION WITH PURCHASE.

CATALOG ONLY.
2 year subscription (8 issues) $4.00.
Free $5.00 gift certificate with catalog order.

R. A. NESS & CO.
THE WOODWORKERS EMPORIUM

8888 N. MILWAUKEE AVE.
NILES, IL 60648
(312) 824-0565

VISA MasterCard

NOW! Get in on the PROFITS in SMALL ENGINE REPAIR!

Start your own money making business!

Work part time, full time—right at home—we help you every step of the way.

No doubt about it... as a small engine pro, you can cash in on the huge demand for qualified men in one of America's fastest growing industries. You'll be able to command top hourly rates of from $25.00 to $30.00 per hour — and that's just for labor. A simple tune-up earns as much as $49.95 for less than an hours work, and parts, engines and accessories will add even more to the profits.

Plenty of business waiting for qualified men.

65,000,000 Small Engines Are In Use Today!

That's the official count from the Engine Service Assn., and one-million new engines are being built each month. With fully accredited Foley-Belsaw training, you can soon have the skills and knowledge to make top money servicing these engines. People will seek you out and pay you well to service their lawnmowers, tillers, edgers, power rakes, garden tractors, chain saws, minibikes, snowmobiles, generators, go-carts, paint sprayers, snowblowers... the list is almost endless.

Professional Tools and Equipment, PLUS 4 H.P. Engine ALL YOURS TO KEEP... All at No Extra Cost.

NO EXPERIENCE NECESSARY!

You don't need to be a 'born mechanic' or have any prior experience. You can master this profitable trade right at home in your sparetime. Lessons are fully illustrated...so clear you can't go wrong, and with our famous 'learn-by-doing' method you get practical 'hands-on' experience. We also show you how to get business, what to charge, where to get supplies wholesale...all the inside tricks of the trade you need to assure success right from the start.

Send for FREE Facts—Do It TODAY!

NO Obligation—NO Salesman Calls!

You risk nothing by accepting this offer to see how easily you can learn the skills you need to increase your income in a high-profit business of your own.

Just fill in and mail coupon below (or send postcard with name and address) to receive full information by return mail.

RUSH COUPON TODAY
Foley-Belsaw Institute
50975 Field Building
Kansas City, MO 64111

FREE BOOKLET!
Send for your copy today!

FOLEY-BELSAW INSTITUTE
50975 FIELD BUILDING
KANSAS CITY, MO 64111

FOLEY BELSAW

☐ YES, please send me the FREE booklet that gives full details about starting my own business in Small Engine Repair. I understand there is **No Obligation** and that **No Salesman** will call on me.

NAME_____

ADDRESS_____

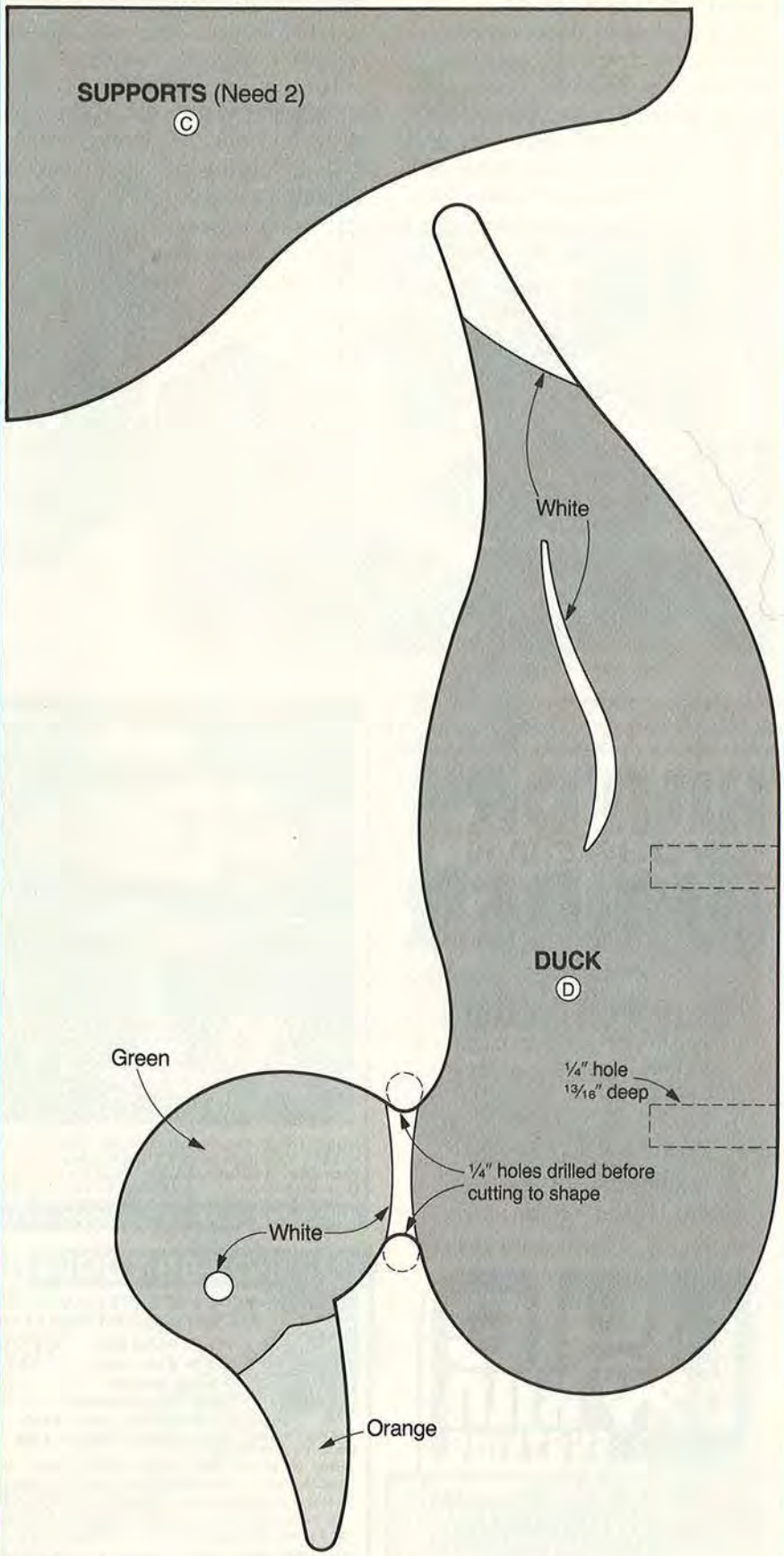
CITY_____

STATE_____ ZIP_____

Full-Sized Patterns

Mallard Mug Rack

Instructions on page 62



LAMINATED
Southern Pine
TABLE TOP

Make your own
Woodworker's Bench

For information write:
Southern Pine, Box 1056
Bay Minette, AL 36507

WOOD TOY

★Patterns
★Parts
★Wheels
★Many New Patterns to Choose from.
★Executive toys

SEND $1.00 FOR NEW CATALOG & RECEIVE COUPON FOR **FREE** WHEELS & AXLE PEGS.

toys and joys
Box 628W Lynden, Wash. 98264

SWING ARM LAMP PLANS

YOU CAN MAKE THIS BEAUTIFUL OAK READING LAMP

$5.95

This attractive lamp attaches to the wall and swings out to a full 22" over your favorite reading spot. Puts the light right where you want it.

INCLUDED:
- FULL SIZE, ILLUSTRATED PLANS
- STEP BY STEP INSTRUCTIONS
- LIST OF MATERIALS
- ELECTRICAL WIRING DIAGRAM
- LARGE COLOR PHOTO

FOR IMMEDIATE DELIVERY SEND $5.95 TO:
THOMPSON HOUSE
1807 GROVE RD.
EL CAJON, CA 92020

Van Dyke's

Presents a Catalog with supplies for upholstery, antique restoration, wood working, caning, brass hardware, carvings and many related trades!

36 Years in Creative Arts & Trades

Many Hard-To-Find Items!

SEND $1.00 FOR CATALOG TO:
Van Dyke's Restorers
Dept. D55 · Woonsocket, SD 57385

22½° OCTAGON GAUGE

TO SET MITER TO SAW BLADE FOR 22½° CUT. HARDENED ALUMINUM GAUGE HAS OCTAGON FORMULAS AND 14" RULER SCREENED ON. ALSO SCREW CHECKER AND INFORMATION.

$7.95 Plus $2.00 Handling and Shipping

California residents add 6% sales tax. Send check or money order to:

LYON ELECTRIC COMPANY, INC.
P.O. BOX 81303 SAN DIEGO, CA 92138

FREE Tool Catalog

Quality Products For Woodworkers

Send today for your FREE copy of our new colorful catalog. It's fully illustrated with the finest quality tools, supplies, books, components, hardware, and much more. **Satisfaction Guaranteed.**
Write today for your FREE catalog.

WOODCRAFT SUPPLY CORP.
Dept. WBH96
41 Atlantic Avenue, Box 4000
Woburn, Massachusetts 01888

SCROLL SAW OWNERS

Lettering Layout Guides!

- Use our specially designed guides to layout letters & numbers to be cut from wood or other materials.
- Made from a durable plastic material.
- Several styles & sizes.

Send $3.00 (Refundable with first order) for descriptive brochure & prices to:

SEYCO SALES 1238 Bardfield
Box 472749
Garland, Texas 75047

HORTON BRASSES
Nooks Hill Road, P.O. Box 120J
Cromwell, CT 06416 (203) 635-4400

HORTON BRASSES are authentic copies of 17th, 18th, 19th & early 20th century pulls

Mfrs. of Cabinet & Furniture Hardware for Homes & Antiques.
Send $2.00 for a Catalogue.

TURNCRAFT CLOCK CO.

For the
MASTER CRAFTSMAN
OUR FRIEBURG PLAN #160
51" H. 16½" W. 9¼" D.

Advanced woodworkers will enjoy building this beautiful Vienna Regulator. See our general catalog for choice of 3 movements and dials, turnings, eagle as well as many other clock plans.

ORDER TODAY!
7912 Olson Hwy 55
Dept. BH-986
Golden Valley, MN 55427

To Order Call **1-800-544-1711**
1986-1987 Catalog $3.00 refundable.

Plan #160
$6.50 Plus $1.00 Shipping and Handling

BUILD A LEGEND

The CONCORD STAGE COACH, a symbol of the early West. This 1" scale miniature was detailed from an original coach built in 1849. Build this picturesque miniature using our full-size cutting patterns, photos, assembly views and instructions. $14.95.

1" Scale CONESTOGA WAGON PATTERN.....$14.95.

"MAKING MODEL HORSE-DRAWN VEHICLES" by John Thompson paperback, includes plans and techniques for miniatures $15.95. **(With this ad only—both patterns $25—all 3 items $39.95.)** Include $2 for hdlg. insr. Catalog $1—free w/order. MasterCard accepted $20 minimum.

Criss-Cross Box 324BY Wayne, N.J. 07470

ANTIQUE & USED TOOLS

Quality, older hand tools for collectors and woodworkers. Illustrated lists published 5 times a year.

SUBSCRIPTION > $5.00
CURRENT LIST > $1.25

BOB KAUNE

specializing in
Stanley Tools
buy and sell

511 W. 11th • Port Angeles, WA 98362
(206) 452-2292

Kid's Kitchen Appliances

Little cooks will love these! Send for clear concise plans to build all of the above items.

PLAN #582-W	$ 8.95
OUR NEW CATALOG	$ 2.00
POST. & HANDLING	$ 1.50
TOTAL	

Catalog price is refundable with next order. Iowa residents add sales tax.

THE WORKSHOP BLUEPRINT CO.
P.O. BOX 65725, WEST DES MOINES, IA 50265

WOODWORKERS HARDWARE
WHOLESALE ORDER FORM

Pt. No.		Price
WOOD WHEELS		
W075	3/4"	$3.50/100
W087	7/8"	$4.70/100
W100	1"	$6.00/100
W125	1¼"	$8.00/100
W150	1½"	$11.00/100
W175	1¾"	$15.60/100
W200	2"	$19.50/100
W225	2¼"	$7.30/20
W250	2½"	$8.80/20
W275	2¾"	$10.20/20
WHEEL PEGS		
AP1 fits 1"-2"		$4.10/100
AP5 fits 2¼"-2¾"		$1.98/20
4" PLASTIC SPOKE WHEEL		
1741		$.90/ea
LITTLE PEOPLE 2-3/8" Birch		
LP3 Men		$2.46/10
LP4 Women		$2.46/10
TOY CARGO		
433 Pickle Barrel		$2.31/10
434 Oil Drum		$2.31/10
435 Milk Can		$2.15/10
JIGGLE EYES		
88060	1/4"	$1.40/100
88010	3/8"	$1.70/100
88120	1/2"	$2.10/100
88200	4/5"	$4.35/100
BIRCH PEGS		
MGP1		$.27/ea.
	3-3/8"	$25.00/100
SKP1		$.28/ea.
	3½"	$26.00/100
1770		$.18/ea.
	3-3/8"	$13.00/100
1771		$.17/ea.
	2½"	$14.40/100
MINI PEG		
SKP1M		$.11/ea.
	1¾"	$7.60/100
SKP2		$.30/ea.
Oak	3½"	$28.00/100
BIRCH SPINDLES		
S6	5¾"	$.42/ea.
S85	9"	$.72/ea.
S110	11"	$1.17/ea.
GALLEY SPINDLES		
S1 Birch		$.10/ea.
S10Oak		$.12/ea.
S4		$.17/ea.
S40ak		$.24/ea.
DOWEL PIN		
Birch		
1142		$1.90/100
1/4" x 2"		$8.75/500
1382		$2.00/100
3/8" x 2"		$9.25/500
GAME PEGS		
316N		$1.10/100
		$9.95/1000

Pt. No.		Price
SCREW HOLE BUTTONS		
1432	3/8"	$1.76/100
Birch		$7.50/500
1434	1/2"	$1.76/100
Birch		$8.00/500
1452	3/8"	$3.70/100
Oak		$15.50/500
1454	1/2"	$3.80/100
Oak		$16.00/500
WOOD CANDLE CC1		BIRCH CUP $.31/ea.
BRASS PLATED 718		CANDLE CUP $18.00/100
BRASS 878		EAGLES 2" $2.16/10
CLOCK MOVEMENT W/HANDS		
Q-82	1-4	$6.48/ea.
	5-9	$5.10/ea.
	10-24	$4.55/ea.
	25+	$3.95/ea.
CLOCK DIAL 1772		PLASTIC 5" $1.80/ea.
CORD SETS		
CS6	6'	$1.00/ea.
CS8	8'	$1.10/ea.
PUSH-THRU LAMP SOCKET 940		$1.49/ea.
LAZY SUSAN BEARINGS		
LC3		3" $.69/ea.
LC4		4" $1.00/ea.
LC6		6" $2.05/ea.
12C		12" $5.99/ea.
CLIPBOARD CLIPS		
L5	3"	$.55/ea.
ST6	6"	$.75/ea.
MAGNETIC STRIP 120A 120"x1/2"		$4.40/Roll
CORK SHEETS C31 8½"x11"		$.60/ea.
PLASTIC GLASS		
357 5"x7"		$.35/ea.
380 8"x10"		$.65/ea.
314 11"x14"		$1.20/ea.
SHELF 517		PINS $5.40/100
RING HANGER 1612		$2.15/10 $19.20/100
BRASS PLATED PICTURE HANGER S23		$4.70/100
TRIANGLE HANGERS		
6290		1/2" $3.25/100
6291		3/4" $3.45/100
6292		1" $4.55/100

Pt. No.		Price
SAW TOOTH PICTURE HANGERS		
S59	1-5/8"	$4.17/100
S60	2¾"	$4.50/100
406 Self Fastening		$4.77/100
PRONG HANGER 6288		$2.75/100
SOLID BRASS CUP HOOKS		
812	1/2"	$6.70/100
858	5/8"	$7.60/100
834	3/4"	$8.60/100
835	7/8"	$8.70/100
836	1"	$10.60/100
6" BRASS & PORCELAIN HOOKS		
6417 Three Prong		$5.85/ea.
6416 Two Prong		$2.97/ea.
BLACK HAMMER HINGE W/SCREWS		
1730		$1.62/2 $7.17/10
BRASS PLATED HINGES		
910	1"	$1.30/10
928	1½"	$2.25/10
Screws for Above F124		$2.40/100
PRODUCTION SCREWS		
6277	1¼"x #6	$1.70/100
6278	1-5/8"x #6	$1.90/100
6279	2"x #6	$2.50/100
6282	3"x #8	$4.75/100
CARPENTERS GLUE E705		$11.37/Gal.
SAND PAPER SHEETS 9"x11"		
81220 220gr.		$16.75/100
81150 150gr.		$16.80/100
81120 120gr.		$16.90/100
81100 100gr.		$17.20/100
81080 80gr.		$11.50/50
81060 60gr.		$11.60/50
81050 50gr.		$11.70/50
81234 Assort.		$16.50/70
SANDING BELTS		
3"x21"		
1700 120gr.		$12.20/10
1701 80gr.		$13.00/10
1702 50gr.		$13.50/10
1703 36gr.		$14.65/10
3"x24"		
1704 120gr.		$13.10/10
1705 80gr.		$13.50/10
1706 50gr.		$14.60/10
1707 36gr.		$15.85/10

ORDER TOLL FREE 1-800-441-9870 MN 1-612-472-5544 7 AM -6 PM Central

Send $1.00 for Catalog or $5.00 for Catalog plus Best Selling plan package ($10.00 value) or order directly from this ad by phone or mail.

HOW TO ORDER: State quantity, part number, item, price, and total of order. Send check, money order, or Visa or M.C. number and Exp. date. Shipping: $25.00 to $49.99 add $3.50, $50.00 to $99.99 add $4.50, Over $100.00 add $5.00. MN. Res. add 6% tax. Minimum order $25.00.

Please send me: ☐ Catalog $1.00 ☐ Catalog and Plan Package $5.00

Print Name _____ Phone # ( ) _____

Address _____

City _____ State _____ Zip _____

MEISEL HARDWARE SPECIALTIES Box 258 W10 Mound, MN 55364

Bringing home the wood

By Leon Powell, who brought us his warm memories of "The Christmas Wagon" in WOOD Magazine, December, 1985

Print this article

The history of many an amateur craftsman is written in his woodpile. For years I've been bringing home wood from country sawmills, broken furniture, fallen barns, and bargain purchases. Looking back, I relate events and places to some prized piece of wood I've happened upon. Each trip or vacation has usually produced something — a rosewood board, maybe a walnut log, or a maple burl. I think many woodworkers do this. We're always looking for something more magnificent than we've ever used.

"Each of us can recall finding a special source for lumber, the finding sometimes more satisfying than the building"

Some woodworkers never become obsessed this way. They simply walk into a lumberyard, buy what they need, and take it home. They have missed something: Rare pieces of wood elude them.

Usable wood turns up in the most unexpected places. When it does, you must not hesitate.

Once, driving by new interstate highway construction in Tennessee, I saw a good walnut log in a pile of debris. True, it was small, only about 8" in diameter and 6' long. But I had seen it among lesser hardwood scraps ready to be hauled to the dump. My wife sighed and smiled as we got the log into the car trunk and hoisted our only emergency signal — a white handkerchief of triumph, not surrender — on the end of it to warn others. Three hundred miles and years later, this log made several candlesticks.

A truck full of walnut for $60

One of my greatest thrills as a wood hunter involved tracking down and buying a truckload of wide and thick walnut boards for $60. Even 20 years ago it was a bargain.

While living in South Carolina, I noticed a newspaper ad offering walnut lumber for sale. The ad contained no phone number, but advised readers to inquire at a country grocery. It turned out the operator of the grocery didn't own the lumber but she knew the man who did.

The man I met was nearly 70, dressed as a workman, with the graphics of weathered wood in his face. He stepped from his pickup and told me before I introduced myself, "Leave your car here and we'll go by truck." We drove away through a mixed stand of

Continued on page 88

MAKE WHIRLIGIGS WOOD TOYS

100's of plans, parts, kits, books, finishes & supplies for toys, whirligigs, classic autos, swing sets, doll houses, crafts & furniture. Also toy, craft, game & furniture parts in maple, oak, walnut & cherry. Bulk prices available. Color catalog subscription $1. (614) 484-4363

DUCK KITS
$19.00 Precut Kit
just assemble & paint
$15.00 Uncut Kit
just cut, assemble & paint

Cherry Tree Toys, Box 369-409, Belmont, OH 43718

RECANE *for fun and profit*

Recane or re-rush heirloom chairs — for yourself or for others as a profitable hobby — with our full line of materials & instruction books.

Since 1934 America's largest selection of caning & basketry materials & supplies —

- Superior quality weaving cane & machine woven cane
- Flat oval & round reeds
- Fibre & genuine rush
- Danish seat cord
- Raffia, rattan, seagrass
- Hoops & handles

Illustrated catalog with complete how-to-do-it information, prices, order form: $1 (refundable with 1st order)

CANE & BASKET SUPPLY CO.

1283 S. Cochran, Dept. W, Los Angeles, CA 90019

NOW A SURFACE THICKNESS SANDER AT A NEVER BEFORE PRICE

$179.95
Includes Vacumn dust collector (not shown)

The **PERFORMAX SANDER** attachment clamps onto your radial arm saw column instantly. Powered by the saw motor and with the drum height controlled by the saw adjustment mechanism, this space saving attachment will make a useful, inexpensive addition to your woodworking tools.

- A open end design allows you to sand boards from 1" to 44" wide.
- A new slide fastener eliminates the need for special paper adhesives and makes changing papers a snap!
- You will be able to finish sand to uniform thickness with remarkable speed.
- Makes edge sanding for parallel edge jointing easy.
- Your **PERFORMAX SANDER** requires minimum storage space when not in use.
- Moneyback Guarantee

For additional Information Write:

PERFORMAX
17065 Judicial Rd.
Lakeville, MN 55044
Or Call
1-800-328-5727 Ext. 114
1-800-742-5685 Ext. 114 in Minnesota

DELTA HEAVY DUTY SHAPER

Because it has two speeds – 7,000 and 10,000 RPM – it will handle just about any shaping operation. Single phase, 230V, 3 HP motor reverses. Table size is a large 28" x 27". Spindle travel is 3". Capacity under the nut is 2-1/2" for the 1/2" spindle and 3-1/4" for the 3/4". Includes fence guard assembly, 3/4" and 1/2" spindles, 4/1/2" Safe Guard II™ spindle guard, one table extension, table inserts, starting pin, two speed pulley and all wrenches.

Delta 2-Speed Heavy Duty Shaper (424 lbs.) with Router Chuck (worth $69.00).

	List	SALE
43-375	$2195.00	**$1499.00** delivered

DELTA SCROLL SAW

Big 2" capacity for large jobs. Infinitely variable speed from 40 to 2000 cutting strokes per minute, an easy-to-read LED digital speed readout, the quickest changing chucks in the industry. 16" round cast iron table that rotates 90° and tilts 30° left, 45° right, 15° up and 30° down, special balancers for vibration-free cutting. The solid "C" arm and constant blade tension keep blade breakage low. You also get an assortment of 96 blades free.

18" Electronic Variable Speed Scroll Saw with stand, single phase 115V solid state electronic controlled, permanent magnet motor, 96 assorted blades and all blade changing tools with FREE 9" worklight (worth $24.00).

	List	SALE
40-601	$1117.00	**$699.00** delivered

Woodworker's Supply
OF NEW MEXICO

5604 Alameda, NE • Dept., Wood
Albuquerque, NM 87113
Toll-Free: 1-800-645-9292 VISA/MC

—Rare— MACASSAR EBONY

MAGNIFICENT GRAIN, high figure or subtle.

MATCHLESS DIMENSIONS, 1" up to 9" thick, 4" up to 20" wide. Random lengths to 9 feet. Best selection available in the U.S.

LOWEST COST from a *DIRECT IMPORTER. NO MINIMUM ORDER.*

A. Eisenbrand, Inc.
4100 Spencer Street, Suite EW4
Torrance, CA 90503
(213) 542-3576

BRANDING IRON

Call toll free anytime to order your BrandMark

(orders only)

1-800-287-8400 ext. 720

In Florida 1-800-287-8400 ext. 720

Mention this Advertisement and receive $3.00 off the regular price.

Your Satisfaction Guaranteed

- Convenient torch heating
- Solid Brass—lasts years
- 1st line as shown
- 2nd line—18 letters/ spaces max.
- ¼" letters
- distinctive border
- $31.00 ppd
- OH res. add $1.71 tx

VISA Order by mail from MasterCard

BrandMark
462 Carthage Dr. • Dept W • Beavercreek, OH 45385
513-426-6843

Sleeveless DRUM SANDER

NO PRE-MADE SLEEVES TO BUY

ECONOMICAL — Simply cut sandpaper from standard size sheets
UNIQUE — Twist of key tightens sandpaper to drum.
SPONGE RUBBER backing insures long wear of sandpaper

1" x 3" long	$13.50
2" x 3" long	$15.50
2½" x 3" long	$16.00
3" x 3" long	$17.50

1" and 2½" Above $27.00
Above 4 Drums $55.00

¾" x 3" long	$14.50
2½" x 4½" long	$21.00
3" x 4½" long	$22.50
2½" x 6" long	$25.50
3" x 6" long	$27.50

Add $2.50 Per Order For Shipping

AVAILABLE WITH:
½" Bore with ½" or ¼" shaft
½-20 RH Thread except ¾" x 3"
⅝" Bore except ¾" x 3" and 2" x 3"

USE ON:
Drill Press
Small Motor
Lathe, Combo-Tools,
Radial Saw, ¼" Drill

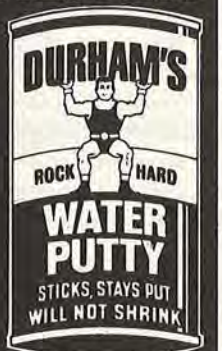
MONEY BACK GUARANTEE

Send Check or Money Order to:

SINGLEY SPECIALTY CO. INC.
P.O. BOX 5087B, GREENSBORO, N.C. 27403
CALL: (919) 852-6581

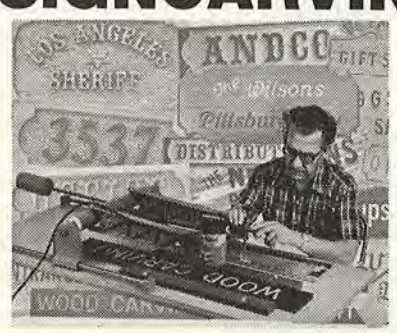
WOOD REPAIR

Durham's Rock Hard Water Putty makes lasting repairs in wood. Won't shrink or fall out. Sets quickly, holds tight and can easily be painted. Economical, easy to use. Available at lumber, paint and hardware stores.



DONALD DURHAM COMPANY
Box 804-W Des Moines, IA 50304

SIGNCARVING *IS PROFITABLE!*



And it's easy, if you use the Marlin Woodcarvers and accessories. You can carve signs quickly at home or at swap meets. The machines do the work, the operator has the fun and profits.

No Special Training Is Required!

SEND $1.00 FOR OUR BROCHURE AND PRICE LIST, AND BEGIN TO PLAN YOUR FULL OR PART-TIME BUSINESS.

Fine Carving Machines Since 1971

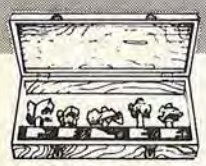
MARLIN INDUSTRIES
1911 OBISPO AVE., DEPT. D610
LONG BEACH, CA 90804
(213) 498-0767

MARLIN CARVING MACHINES

TOOL CITY
BEATS ANY AD PRICE THIS ISSUE
FREIGHT PREPAID (USA)

SAVE UP TO 60% ON:

Makita Milwaukee PORTER-CABLE RYOBI HITACHI BOSCH freud SENCO NAIL GUNS
PHONE FOR SALE PRICES



CABINET MAKERS
FREUD CABINET ROUTER BIT SET
1 Door Lip
1 Reversable Glue Joint
1 Raised Panel
2 Reversable Stile & Rail Set
LIST $342.00
SALE PRICE $189.00

FREUD TOOLS
SETS WITH CASE
CHISEL SETS

MDL #	REG.	SALE
4 pc WC104	32.90	19.95
6 pc WC106	43.90	28.95
10 pc WC110	73.60	48.00

TURNING SET

8 pc TT108	74.70	48.00

CARVING SETS

6 pc CS106	82.40	57.00
12 pc CS112	153.90	99.00

ROSEWOOD MALLET

MALLET 1	24.95	14.95

FREUD CARBIDE ROUTER BIT SETS
Both come with wooden case

	List	Sale
15pc set	299.00	134.00
26pc set	449.00	336.00

FREUD

FREUD SAW BLADE SPECIALS
FREUD CARBIDE—TIPPED SAW BLADES
10" x 5/8" Bore

No.	size	teeth	use	list	sale
LU72m10	10"	40	general	$68.58	34.50
LU73m10	10"	60	cut-off	79.65	34.00
LU82m10	10"	60	cut-off	86.40	42.00
LU84m10	10"	50	comb	74.51	35.00
LU85m10	10"	80	cut-off	110.88	59.95
LM72m10	10"	24	ripping	68.58	34.00

ALL OTHER FREUD SAW BLADES
PHONE FOR SALES PRICES

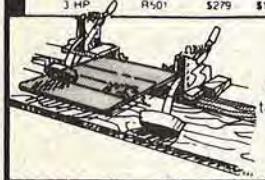
FREUD CARBIDE DADO'S

DS306	6"	—	Dado	139.00	92.00
DS308	8"	—	Dado	179.00	99.00
AD800	8"	Adj	Dado	95.00	44.00

NEW MODELS
PLUNGE ROUTERS
Both models include FREE accessories $39 Value!

HP	MODEL#	LIST	SALE
1HP	R151	$169	$99 PPD
3 HP	R501	$279	$169 PPD

12½" PLANER/ JOINTER COMBINATION
Unlike others it has 2 planing feed rate
MODEL AP1015 19.7 ft/min & 29.5 ft/min
SALE PRICE $1195.00 PREPAID LIST $2399



Shophelper
Safety guides
• hold work down firmly on: table saws, radial saws, band saws, shapers, motorized mitre boxes, jointers, etc.
$75.00pr

MODEL AP10
10" PLANER
13 amps power feed
LIST $689
SALE PRICE $365.00 PREPAID
Set of Extra Blades $29.95

BIESEMEYER
BIESEMEYER RIP FENCES

28"	Homeshop	195.00	52"	Commercial	295.00
40"	Homeshop	199.00	62"	Commercial	322.00
52"	Homeshop	249.00	98"	Commercial	399.00

CALL FOR OTHER BIESEMEYER PRODUCTS
AC ULTRA FENCE $199.00

PORTER-CABLE
MORTISE & TENON JIG
REG $49.00
SALE $33.95

WE HAVE EVERY TOOL YOU NEED

TOOL CITY
14136 E. FIRESTONE BLVD.
SANTA FE SPRINGS, CA. 90670
(213) 802-1236 OPEN MON - SAT 8 AM - 5:30 PM

CALL TOLL FREE
VISA PERSONAL CHECK
INSIDE CALIF 1-800-826-7819
OUTSIDE CALIF 1-800-423-7899
FREE WITH ORDER - TOOL CITY CATALOG

Bringing home the wood

Continued from page 86

hardwoods and pine along a graveled road, into a dirt farm road that ended a mile later at a sagging barn.

Inside the barn, walnut lumber was stacked several planks deep on the ceiling joists. The boards had been plain-sawed about 1½" thick, from 12-20" wide, and averaged 18' in length. "This is what it is," he told me. "It's been here for years. I'll never use it."

One batch of the lumber had been sawed from trees blown down in a 1924 tornado, but the remainder of it was newer, he explained, sawed after the trees were cut during land clearing in 1936. We agreed on price and he promised to deliver it.

At daybreak the farmer and a helper arrived with the walnut on a flatbed truck. The load looked bigger than it had in the barn, and prompted a "Where will you put it all?" from my astonished wife. "In the garage," I said. "Where else?"

The load half-filled the large garage, yet I steadfastly defended the purchase on grounds that such an opportunity might never come again. During succeeding days I frequently went out to admire those heavy boards, turning them over in my hands and dreaming of future projects. At the time I was doing a considerable amount of carving and part of the lumber went for that. It was a joy to work such well-seasoned wood.

I still had most of those walnut boards five years later when I moved 800 miles to a new job. Professionals moved the household goods, but I rented a truck and took the boards with me. Now, only about 20 remain.

"There is something uniquely appealing in the odd swirl of grain, in a certain tone or texture in the wood"

A recent survey of my woodpile, placed wherever I can find shelter for it, shows walnut crotches given by a neighbor, a walnut stump laboriously dug up with a shovel a few years ago, several 4x6" white oak timbers from pallets, and an unidentified species of yellowish wood with a reddish stripe running with the grain.

A bit added or taken and the woodpile changes. Some old cuts once considered ordinary have been opened to reveal something unusual. This happened not long ago when I turned two attractive bowls from spalted maple, which had previously been discarded and left to weather in the open air. Finding such surprises is why woodworkers collect wood. It all tells a story. This is the tree's memory of bygone summers, rains, winter storms, and stresses. The character of the tree, created from such natural forces, evokes a response in us and brings fulfillment when we work the wood.

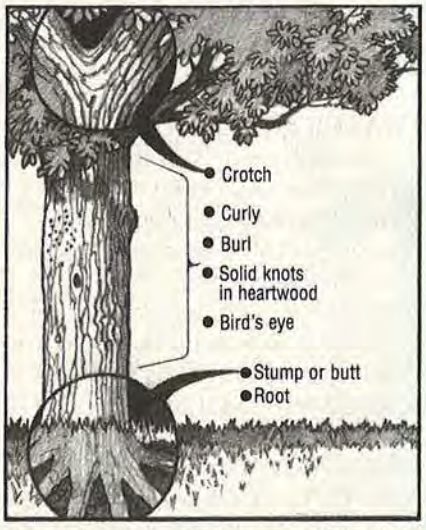
The only problem is where to store the next batch I'm sure to hear about soon.

FACTS ABOUT FIGURE

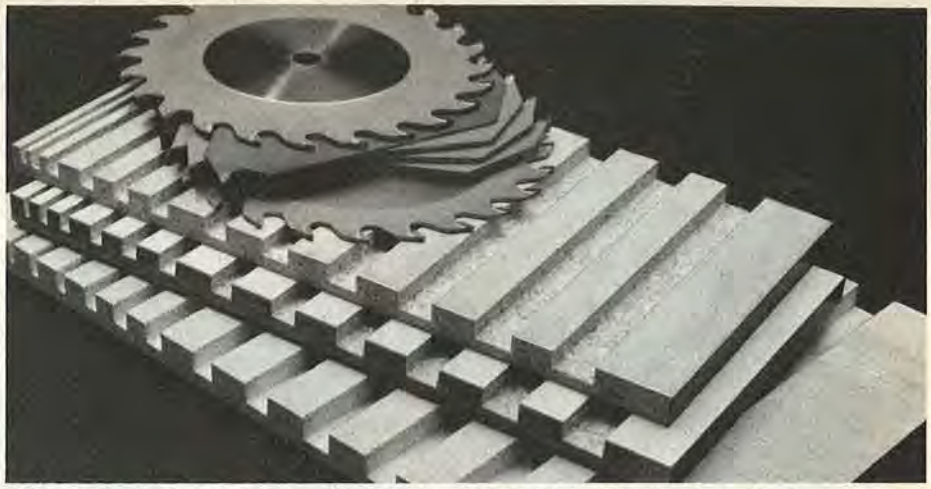
Want to work with figured wood? In most cases, it requires special care. Here's advice. For color photos and more information about figured wood, see page 42.

- Thick green slices of crotch wood and stump wood must dry very slowly. Coat them on all sides with paraffin or another sealer. Then follow this rule of thumb: Allow one year of drying time for every 1" of thickness.
- Avoid tearing out the hard "eyes" in bird's-eye by planing with abrasives only. Or, run the board through your planer at a slight angle. Reversing feed direction sometimes works, too.
- Stump, crotch, and burl often develop small splits along the grain. Use colored wood putty to fill.
- Figured wood doesn't stain evenly. Use clear finishes for best results.
- Figured wood from stumps, crotches, and burls really soaks up a finish, just as end grain does. Prevent this by applying a sealer first.
- Burl and crotch veneers aren't flexible. Handle with care.

Where to buy gunstock blanks:
Reinhart Fajen, Inc., Warsaw, MO 65355, catalog, $5.
Johnson Wood Products, Rte. 1, Strawberry Point, IA 52076.



Figured wood and where you'll find it in the tree — if you're lucky! Loggers' trash can be your treasure.
Illustration: Jim Stevenson



DML dado sets offer a full range of cuts — 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", and 13/16".

DML dadoes cut & cut & cut . . .

DML dado sets give you the results the professionals look for . . . because these are the same dadoes the pros buy. Precision all the way — hollow-ground outside saws, tensioned, and top-ground, to be run specifically as a right or left hand blade. Saw teeth and chippers tipped with

premium C-4 grade carbide . . . 3/8" long by .160" thick, for more regrinds and longer tool life. Dadoes designed to go with or against the grain. In soft or hard woods. Laminated particleboard. And other substrates. A smooth cut every time.

You can order from three different sizes — 8" diameter x 5/8" bore, 10" diameter by 5/8" or 1" bore, or 12" diameter x 1" bore. Each set includes a left hand and a right hand saw blade, one 1/16" chipper, two 1/8" chippers, and one 1/4" chipper, for a maximum width of 13/16". And you can order extra chippers in all three diameters, to widen your cut as much as you want.

Each DML dado set comes packaged in a handsome wooden case, with brass clasps and hinges, and lined with foam rubber to protect the carbide teeth.

Now the choice is yours. You can get DML, for a cut that's clean and true. Or you can take chances with your work.

For the location of your nearest DML distributor, call toll free and ask for Customer Service . . . **800-233-7297(SAWS).**

DML, Inc.
1350 S. 15th Street
Louisville, KY 40210

DML
America's quality tool maker

A SUBSIDIARY OF VERMONT AMERICAN CORPORATION

Don't Miss These WOODWORKING WORLD SHOWS

THE NEW YORK SHOW
Fri. Sept. 26 - 2pm-9pm ● Sat. Sept. 27 - 10am-6pm ● Sun. Sept. 28 - 10am-5pm
SHERATON HOTEL & TOWERS - STAMFORD CONNECTICUT
Exit 7 Off Connecticut Turnpike

THE CHICAGO SHOW
Fri. Oct. 17 - Noon-6pm ● Sat. Oct. 18 - 10am-6pm ● Sun. Oct. 19 - 10am-5pm
O'HARE EXPO CENTER - RIVER ROAD - ROSEMONT, ILLINOIS

FREE SEMINARS ADMISSION $5 DOOR PRIZES
RECEIVE A *FREE COPY* OF *INTERNATIONAL WOODWORKING MAGAZINE* WITH ADMISSION TO THE SHOW

For More Information:
WOODWORKING ASSOCIATION OF NORTH AMERICA ● P.O. BOX 706, PLYMOUTH, NH 03264 ● (603) 536-3878

Print this article

BOATBUILDERS OF THE CHESAPEAKE

For thousands of years, Indians harvested the bounty of Chesapeake Bay, using boats made from trees felled along its shores. Their tools were seashells and fire — "somtymes burninge and somtymes scraping," in the words of colonists who described the process.

Newly arrived English immigrants ridiculed the natives' bevel-ended, hollowed-out canoes. Yet, even as the newcomers mocked, they couldn't fail to notice that three Indians paddling a "hog trough" could easily outdistance eight of their own hard-rowing men. And it wasn't long before the colonists, armed with iron-bitted axes and adzes, began copying the Indians' canoe.

> **The Indians call this Watry Waggon canoo, a Vessel none can brag on; Cut from a Popular-tree or Pine and fashion'd like a Trough for Swine...**
>
> *— Ebenezer Cook, 1708*

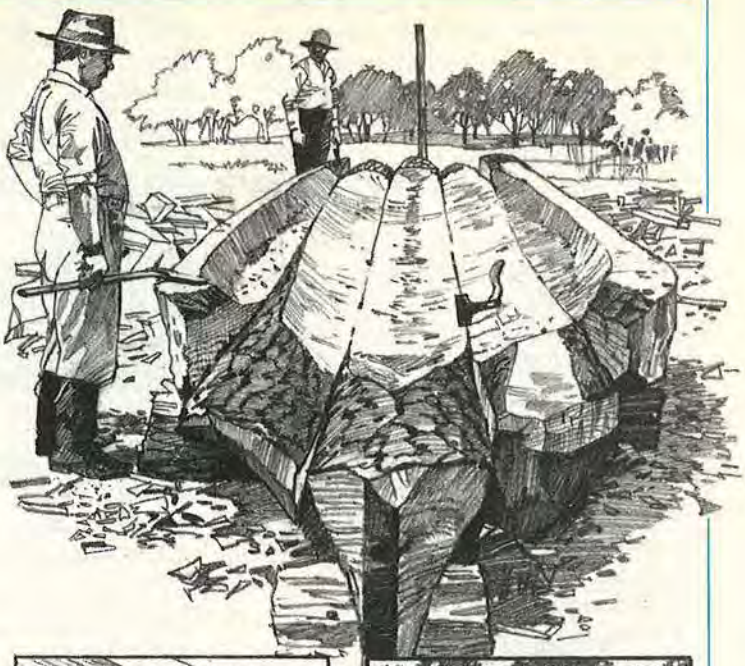
Occasionally, the settlers widened their canoes into vessels called "punts," which a man pushing with a long pole could more easily maneuver than by paddling. They widened the canoe by filling the hollowed pine hull with water, then adding red-hot rocks until the water came to boiling. This wet-bending of the sides produced some stability, but only an experienced waterman cared to fire his musket broadside from such a vessel.

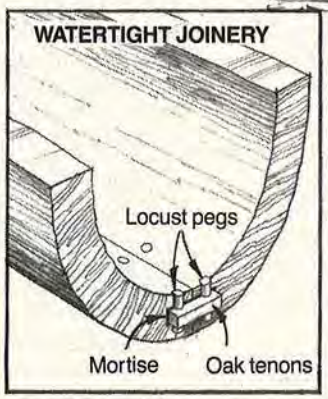
MAKING DO WITH SMALLER TREES

By the late 18th century, the huge trees used for canoes and punts in the early days became scarce. Those that remained were often far from the Bay and troublesome to move long distances.

In Virginia, local legend has it that a slave named Aaron was the man who solved the problem of how to continue making log boats in the absence of large trees. At his home on Lamb's Creek in York County, he took two logs, maybe 20″ in diameter, hewed them square with an ax, and placed them side by side. With a piece of charcoal, Aaron traced the lines of the boat on the top and sides. Then, he separated the logs and shaped them to the lines with an adze.

From time to time, the ingenious Aaron reassembled his log halves to study with his eyes the evolving grace and symmetry of the craft. No model or plan guided his work. As boatbuilders used to say, it was purely "winchum-squinchum."





HEWING A CUNNER FROM FIVE LOGS

Top. **Broadaxes in hand, two boatbuilders set about hewing a five-logged Chesapeake cunner.**

Above left. **Boatbuilders often used free tenons of oak with locust pegs to join watertight hulls.**

Above right. **Raising the gunwales from the original five logs took much piecing and fitting, but resulted in a sleek and handsome craft to clip the waves.**

JOINERY FOR A WATERTIGHT HULL

After Aaron sculpted the timbers to 3″-thick half-shells, he faced fitting them together in a perfectly watertight seam. With time and a sharp blade, he could have worked the fit. But Aaron probably learned somewhere the shipwright's trick of "kerfing in."

Starting at one end of the seam between the temporarily rope-bound timbers, he ran his handsaw down the joint again and again. Each pass of the saw took an equal portion from each side of each tight place in the joint. When the sawteeth cut both sides for the whole length of the seam, the timbers were a perfect fit.

To join the halves, Aaron resorted to another ancient technique, the free tenon (see illustration, *above*). Into both faces of the seam he cut a series of 3″-long, 4″-deep mortises. Next, he set 8″-long oak tenons into each mortise in one of the halves. Finally, he forced the

Continued on page 93

FAMOUS NATIONALLY ADVERTISED

TURBO 550Z™ CORDLESS ELECTRIC SHAVER WITH ACCESSORIES

ONLY $5?

UNBELIEVABLE BUT TRUE!

As part of a nationwide publicity campaign, the New York importing firm of the Direct Connection will give away one million (1,000,000) of its most expensive shavers — the *Turbo 550Z™* with accessories for the astonishing low price of only $5 each to the first one million persons who write to the company address (below) before midnight, Nov. 30, 1986.

FULL ONE YEAR MONEY BACK GUARANTEE!

These shavers are not copies. These are genuine famous *Turbo 550Z™* cordless electric shavers — the same shavers that have been nationally advertised in leading media throughout the country. This innovative shaver combines the proven *rotary method* with our exclusive ultra-thin flexible shaving head — scientifically designed to caress the unique shape and contour of your face for a smooth, clean, gentle shave.

The latest *Tri-rotary™* shaving head includes three high speed, razor sharp, cutting edges that have been precision crafted of the highest quality stainless steel and whisk off unwanted hair and stubble at an incredible 10,000 rpm's! You get a shave that's so close and smooth — without those unsightly nicks and cuts that often occur when you shave with an ordinary razor. The unique shaving head makes this shaver ideal for use by both men and women.

Not only the most expensive, but also the fastest selling cordless electric shaver ever sold by this huge New York firm. Sleekly designed of the newest space-age materials make this shaver rugged yet light weight to make shaving a breeze! Complete accessories include a leatherette carrying case, protective shaver head cover, cleaning brush and long lasting batteries! Its cordless feature makes it ideal for traveling or a quick touch up anywhere. Makes a practical and impressive gift!

These famous brand name cordless electric shavers will not be sold at this price by the company in any store. To obtain one at this promotional price, you must write to the company address below before midnight, Nov. 30, 1986

Each shaver is covered by a full one-year money back guarantee and will be replaced, free of charge, if it ever fails to function. There is a limit of two (2) shavers per address at this price, but requests which are mailed early enough (before Nov. 17) may request up to five.

To obtain your famous *Turbo 550Z™* Shaver with accessories, mail your name and address along with $5 for each shaver requested. Add only $2 shipping and handling no matter how many shavers you are requesting. Mail to: **The Direct Connection, Dept. 8271, 37 West 26 Street, New York, NY 10010.**

MOLD, PLANE and EDGE

—In Your Shop or On the Job!

Spectacular Savings and FREE 30-Day Trial from Williams & Hussey.

FROM $725 COMPLETE

For as little as $725.00 you can own a *complete* Williams & Hussey Molder/Planer System—the machine, the motor, our portable custom stand, *and* a Free sharpening certificate. You *save* $115.00 just by writing for your FREE information kit.

100% American Made to *Keep* You in Business!

We've packaged our rugged, dependable W-7 Series Molder/Planers into a *complete system* that turns rough-cut boards into smooth, saleable items you can be proud of:

Picture Frames • Crown Moldings • Raised Panels • Boat Decks • Casings • Sashes • Rails

And the system *keeps on working* thanks to cast-iron construction and an iron-clad *five-year warranty!* Depend on us for fast shipping, courteous service, and the rugged product quality that's kept W-7 Series owners on the job and working for more than thirty years.

5-YEAR WARRANTY

100% American Made • Caster-Mounted Stand • Cast-Iron Base & Head • Chrome Steel Posts • Serrated-Steel Roller • 2-Minute Changeover

Save $115 — Call or Write for FREE information today!

Free 30-Day Trial!

Cuts Any Molding, Planes Any Hardwood

Duplicates thousands of moldings from 7" wide to 3/4" deep, cuts 15 feet per minute—even rock maple! Edges *any* width board thanks to the open-sided design!

Super-Fast Changeover

Convert your W-7 Molder to Planer *in less than 2 minutes.* No gauges or special tools needed. Blades bolt on and off—*no arbor changes required!*

Thousands of Blade Patterns

Just about any molding knife you need—custom models, too! And we ship our off-the-shelf blades within 48 hours. Need a special knife? Send us a tracing, *and we'll make it for you!*

Choice of Three W-7 Models

Save $115.00 on all three systems: power infeed/outfeed, power infeed only, or manual operation. Each model includes a set of the finest-quality *high-speed steel blades,* the all-steel, caster-mounted moveable stand, plus the rugged 1.5-hp. Baldor motor for years of dependable service.

THE COMPLETE MOLDING/PLANING SYSTEM

• W-7 Series Molder/Planer • All-Steel Roller-Mounted Stand • Rugged 1.5-HP Baldor Motor

—*plus* your FREE $15.00 knife-sharpening certificate!

Williams & Hussey Machine Co., Elm Street, Dept. 236JP, Milford, NH 03055

BUILT TO GO THE DISTANCE

1-800-258-1380 In NH 603-673-3446

Yes! Please rush specs on the W-7 Series Molder/Planers.

Name _____

Street _____

City _____ State _____ Zip _____

Williams & Hussey Machine Co., Elm Street, Dept. 236JP, Milford, NH 03055

FULL SIZE
WOODWORKING PATTERNS
SIMPLE TO MAKE – FUN – PROFITABLE

Check the packets of Interest to YOU!

- ☐ 75 pattern packet plus "Shop Secrets"
- ☐ Over 50 "Folk Art" patterns
- ☐ 8 "Wind-Action" whirligigs packet
- ☐ 40 craft plaques plus projects
- ☐ 27 toy cars, trucks, train, ferry & more!
- ☐ 6 decorative magazine racks

Send $7.00 per blueprint packet or choose any 3 FOR ONLY $14.00.

ACCENTS, Dept. MA96, Box 262, Danvers, MA 01923

Brochure of 500 designs $2.00 (Free with order)

ROTO/CARVE®

and your table saw can reproduce

- A duck decoy
- A wooden shoe
- A table leg
- Hundreds of other shapes in minutes!

SIMPLY BY TURNING A CRANK!

Write or call toll free:

ROTO/CARVE®
Dept. WD
6509 Indian Hills Road
Mpls., MN 55435
(612) 944-5150 or (800) 533-8988

NOW AVAILABLE: AUTOMATIC CRANK DRIVE!

National Carvers Museum

LEARN WOODCARVING AT HOME

Receive sample instructional pack on whittling and woodcarving. Includes copy of *Mallet* monthly magazine.

Send $1.00 to The National Carvers Museum, 14960 Woodcarver Rd., Monument, CO 80132.
(303) 481-4737

CS

BAND SAW BLADES
WELDED TO YOUR EXACT LENGTH

WIDTHS	TEETH	PRICE/INCH
1/8" thru 5/8"	3 thru 32	$.05

COMPLETE BAND SAW BLADE LINE INCLUDING SAW MILL BLADES

TO FIGURE PRICE:
Inch Length x Price/Inch + $1.85 Weld Charge

MINIMUM ORDER $10.00 Add $2.50 per order for packing and shipping. MasterCard and VISA accepted.

TO ORDER Phone or write to:

BUCKEYE SAW COMPANY
P.O. Box 14794, Cinti., OH 45214
1-800-543-8664 (Except Ohio)
1-513-621-2159 (In Ohio)

Brand Your Work

Self-Heating U.L. Listed

Personalize your wood and leather products or handicrafts with the easy to use Craftmark™ Branding Tool. Choose from four branding marks: **Logo • Maker's • Owner's • Custom**

For more information write:
Wall Lenk Corporation Dept. W96
P.O. Box 3349, Kinston, North Carolina 28502-3349

EDLCO
Appalachian Hardwood Specialists

21 species

Domestic Hardwoods
Softwoods

Kiln Dried Delivered Prices
Catalogue $2.00
Write Today EDLCO
Box 5373 W
Asheville, N.C. 28813
Phone (704) 255-8765

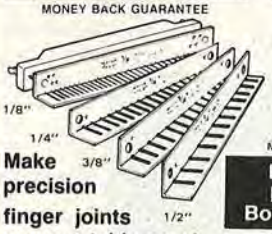
We Know Our Lumber

EDUCATIONAL LUMBER CO., INC.

A NEW TOOL!

accu joint™ Patent Pending

MONEY BACK GUARANTEE



Make precision finger joints on your table saw!

Just set your blade, accu joint will index your work exactly! PERFECT EVERY TIME

Only **$39.95**

☐ PLUS $2 (in U.S.) Shipping & Handling
Mass. residents add 5% tax

Morse Design
P.O. Box 195
Boston, MA 02123

TO ORDER — INFO
CALL 1-800-222-8011
Mass. (617) 262-8436

VISA/MC

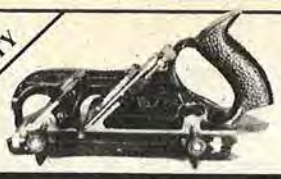
SUPER SCOOPER

KIDS WILL SPEND HOURS OF FUN IN THE SANDPILE WITH THIS CHILD OPERATED BACKHOE • Works like a real backhoe • 3 foot reach • Swings in a full circle on ballbearing • Develops child coordination and motor skills

Easy to follow plans	$ 4.00
16 guage welded steel bucket	$ 10.50
Heavy-duty swivel bearing	$ 10.50
Complete unit	$165.00

Send check or money order to:
BALLART DESIGN 4606 So. 600 East #721
Salt Lake City, Utah 84107

LIMITED QUANTITY



FREE FROG CATALOG
woodworking tools and books

INTRODUCTORY OFFER
RECORD FILISTER PLANE
FOR $39.95 ppd. Reg. $53.95 ppd.
ANOTHER FROG SPECIAL
HURRY! Ask for Free 108 page catalog.

FROG TOOL CO. LTD.
PO Box 8325, Dept. WM6
Chicago, IL 60680
Store-700 W. Jackson Blvd. (312) 648-1270

Clamp Onto Low PRICES!
We'll Pay The Freight!

2-Wood Handles - $1.00

Send Check, Money Order, Visa or MasterCard Number

KIT INCLUDES: 2-heavy steel ferrules with spiral plus... 2-7/16 ACME, double lead, threaded rods...4-5/8 pivot nuts... Complete layout with instructions.

DUBUQUE Clamp Works
527 Garfield • Dubuque, IA 52001

BUILD A CLASSIC

2 Full Size Patterns for Chrysler Sedan & Graham Bros. Truck - Plus Catalog - $10.00

10 Spoke Wheels - Plus Catalog - $7.50

Catalog Alone - $1.50.

TOY DESIGNS
DEPT. BW1086 - BOX 441
NEWTON, IOWA 50208

TOOLMARK

We offer a complete line of wood lathe accessories including:

SAFETY SHIELDS
SPINDLE DUPLICATORS
DUPLICATOR SYSTEMS
BOWL TURNERS
STEADY RESTS
U-TOOL WOODSHAVERS
UNI-CENTER SYSTEMS

For free literature and price list call or write

TOOLMARK CO.
6840 SHINGLE CREEK PARKWAY
MINNEAPOLIS, MINNESOTA 55430
612-561-4210

We offer the best accessories at a good price.

OLD HAND WAYS

Continued from page 90

two halves together with twisted ropes and locked the tenons into place by driving locust pegs into the holes bored through tenon and hull. Once in the water, the swelling timbers, restrained by the long grain of the oak tenons, forced the seam as tight as a Chesapeake oyster, and no waterproofing was used.

IMPROVEMENTS IN SPEED AND SIZE

Aaron later built a larger canoe from three logs, then an even larger one from five. Soon scores of the swift, graceful craft, copied from Aaron, were coursing the Bay — some as long as 50′ and made from as many as seven logs!

Eventually, Aaron's successors added sails to speed the day's catch of fish or oysters to market far ahead of conventional sailboats. The wider boats, however, presented a new problem.

Their keel logs could come from straight trees, but their outer "wing logs", forming the outward- — then inward- — curving gunwales, required trees with the appropriate curves. Specimens such as these could only be found after days of searching. Yet, the rewards were many. In addition to speed, the boats were well-suited to fishing and oystering because they had no internal ribbing, making net- and trap-handling an obstacle-free chore.

These boats came to be called "cunners," and were still being made the original way into the 1930s. You can probably still find one or two skimming along today on the Chesapeake's waters.

By Roy Underhill

Master housewright at Colonial Williamsburg and host of the popular PBS series The Woodwright's Shop, *Underhill is also an author and lecturer.*

Illustrations: Jim Stevenson, with the assistance of The Mariners Museum, Newport News, Va.

Be Your Own Boss and Make

$18.00 to $30.00 AN HOUR!

Your FREE Lifetime Security Fact Kit tells you how to make $18.00 to $30.00 an hour in your own Foley-Belsaw Full-Service Saw and Tool Sharpening Business. Your FREE Fact Kit explains how you can:

- **be your own BOSS!**
- **work full time or part time, right at home.**
- **do work you enjoy and take pride in.**
- **operate a CASH business where 90¢ of every dollar you take in is clear CASH profit.**

And it is *so easy* to learn. Foley-Belsaw gives you all the facts and instructions. No experience or special training is necessary. Foley-Belsaw tells you everything you need to know to be successful.

And there's plenty of business available in your area. You will be able to sharpen all types of saws, garden and shop tools for home, farm and industry.

You will be able to set your own hours and not have to worry about layoffs and strikes. And there are no franchise fees. Any age person can succeed.

But you've got to get the FACTS before you can get started. So write NOW for your FREE Lifetime Security Fact Kit. It's yours to keep with NO OBLIGATION.

. . . send NOW for your FREE Lifetime Security Fact Kit!

FOLEY BELSAW **FREE** LIFETIME SECURITY FACT KIT

The Foley-Belsaw Co.
20301 Field Bldg.
Kansas City, MO 64111

☐ **YES,** I want to know more! Please rush my FREE Lifetime Security Fact Kit.

Name _____

Address _____

City _____ State _____ Zip _____

( ) _____
Area Code Phone

THE WOODWORKING SHOW

machinery— tools – supplies

4 SPECIAL SHOWS!
• FREE WORKSHOPS
• 100 EXHIBITS
• DOOR PRIZES

Widest Variety of Woodworking Products Under One Roof

METRO-DETROIT
September 26–27–28, 1986
Michigan Exposition & Fairgrounds

WESTERN WASHINGTON
October 31–November 2, 1986
Seattle Center

TWIN CITIES
October 10–11–12, 1986
Minneapolis Auditorium & Conv. Hall

NORTHERN CALIFORNIA
November 21–22–23, 1986
San Jose Convention & Cultural Center

Seminars by Master Craftsmen — Krenov — Kirby — Dunbar

1-800-826-8257, In California 213-477-8521
Call for free brochure, 8:30–5 Pacific Time

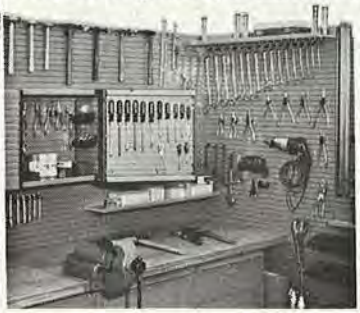
Bring ad and save $1 OFF regular admission price of $5.

c

SHOP SHAPE-UP with CONCEPT 2001

For years recognized by the European woodworker

Quality that will last!!



Bins, brackets, hooks and shelves all fit into the grooved wall panels and cabinets of our German-designed modular storage system. You can buy one cabinet or panel **of foamed PVC** or outfit the whole shop.

To introduce you to this innovative organizer system, we offer CABINET 301 at ½ PRICE.

CALL IN YOUR ORDER NOW:
(305) 979-5802 or
SEND ORDER COUPON TO:
CONCEPT 2001 Inc.
1321 N.W. 65th Place
Ft. Lauderdale, FL 33309

TOOL CABINET 301
(27½ x 19 x 7) orange color - grey trim, with 44 absolutely stay-put Tool Hooks. Completely adjustable.
ONLY $45.00
(+ $6.75 ea. shipping & handling)

Check or Money Order ☐ Visa ☐ MC Qty _____
Card No. _____ Exp. Date _____
Name _____
Address _____
City, State, Zip _____
Signature _____

NAME IT AND YOU'LL FIND IT AT A **WOODWORKING TOOL SHOW**

If you have reservations about buying woodworking tools sight unseen via mail order, do your shopping in person at a woodworking tool and machinery show. Or, go just to attend the workshops and meet some fellow woodworkers. You'll have a ball!

We felt like Alice in Wonderland stepping through the Looking Glass when we walked into our first woodworking tool and machinery show. It's a golden opportunity to touch, use, and buy all those mail-order tools you've only read and dreamed about.

Woodworking shows have really caught on in just the past few years (Woodworking World, the Woodworking Show, and the Working with Wood Show are the three leading promoters). Now, they are held in many major cities across the U.S. Retailers, distributors, and manufacturers of tools, machinery, hardware, and supplies show off the latest in everything from multi-machines to lignum-vitae mallets.

In addition to products, you'll find a variety of instructional seminars, lectures, and technique workshops.

The wealth of information in the presentations and at the displays alone makes the trip well worthwhile. And you can pick up some great tips by just rubbing elbows with fellow woodworkers.

MAKE IT A DAY — OR A WEEKEND!

Come early, stay late, and bring your billfold. These three tips alone can make the difference between enjoying yourself and really enjoying yourself. Most of the shows start on a Friday and run through Sunday afternoon, so you may even want to combine the show with a weekend getaway trip.

Many exhibitors offer "show specials" that are tempting even to the woodworker who thought he had everything. Don't be afraid to ask questions — or, if you're really interested, a hands-on demonstration. The exhibitors are extremely knowledgeable and usually more than happy to share their opinions, techniques, and tips.

In addition to all the seminars, you'll find many free brief demonstrations and workshops on the exhibit floor. All three principal sponsors charge $5 admission; Woodworking World Shows and The Woodworking Show offer $1 off that price if you bring their magazine advertisement offering the refund.

CALENDAR OF MAJOR TOOL SHOWS

Here's a listing of sponsors, upcoming shows, and where to write for more information. (Because show names are so similar, be careful to keep the shows straight.)

- **Woodworking World,** sponsored by the Woodworking Association of North America (WANA), currently offers nine shows a year with an average of 50 exhibitors per show. One-hour seminars throughout the day are included with admission to the show. A sampling of the seminars includes "Table-Saw Techniques" with Roger Cliffe and "Scroll Saw Use" presented by Wolfgang Derke. Two-hour lectures are $20, with speakers such as noted cabinetmaker and furniture designer Ian Kirby. Day-long workshops (10:30 a.m. - 4:30 p.m.) also are offered for $50.

For information, write:
Woodworking World, Woodworking Association of North America, P.O. Box 706, Route 3 and Cummings Hill Rd., Plymouth, NH 03264. Or call: 603/536-3876.

Upcoming shows:
Stanford., Conn., Sept. 26-27-28; Chicago, Oct. 17-18-19; Charlotte, N.C., Nov. 21-22-23.

- **The Woodworking Show** sponsors eight shows a year with an average of about 100 exhibitors per show. You'll find free hour-long workshops throughout the day, ranging from decoy carving to routing. Seminars lasting 2½ hours and costing about $25 run throughout the day. It's well worth the seminar fee to see and hear such furniture-making notables as James Krenov and Sam Maloof in person.

For information, write:
The Woodworking Show, 1516 South Pontius Ave., Los Angeles, CA 90025. Or call: 1/800-826-8257.

Upcoming shows:
Detroit, Sept. 26-27-28; Minneapolis, Oct. 10-11-12; Seattle, Oct. 31-Nov. 2; San Jose, Nov. 21-22-23.

- **The Working with Wood Show,** organized by Jennifer Douglas Productions, hosts seven shows a year. About 50 exhibitors participate in each show. Free workshops feature nationally acclaimed craftsmen such as Wally Kunkel and John Kassay. In addition, special guest speakers include such personalities as George Nakashima, author of *The Soul of a Tree.*

For information, write:
Working With Wood Show, 467 Saratoga Ave., Suite 110, San Jose, CA 95129. Or call: 408/973-0447.

Upcoming shows:
Dayton, Ohio, Sept. 19-20-21; Phoenix, Oct. 24-25-26; Anaheim, Calif., Dec. 5-6-7.

Illustration: Jim Stevenson

NEW! *Woodmaster* Variable Speed Planer/Molder

Like Having A Lumberyard Right In Your Shop!

SAVES YOU MONEY! Put this versatile power-feed tool to work in your own shop. See how fast it **pays for itself!** Quickly converts low-cost rough lumber into valuable finished stock. Turns out perfect picture frames, stock, quarter-round, casing, base mold, tongue & groove...all popular patterns...any custom design.

MAKES YOU MONEY! Now you can start your own high-profit business selling all types of millwork to lumberyards, carpenters, contractors, picture framers, do-it-your-selfers. Use it to make grandfather clocks, gun cabinets, furniture, toys, planters, porch swings, benches, paneling, flooring. In fact, this one power-feed tool opens up a truly astonishing range of products you can make and sell.

Optional jointer lets you move back to planing without changeover.

Produces tongue and groove with one set-up, two boards in same pass.

Turns out high-value, satin-smooth custom moldings plus all popular patterns.

Optional sanding head converts planer to power-feed drum sander!

FREE INFORMATION KIT

New Variable Feed Rate
Now, just a twist of the dial adjusts your planer from 70 to over 1,000 cuts-per-inch! Produces a glass-smooth finish on tricky grain patterns no other planer can handle...perfect for molding work where profiles make sanding impossible.

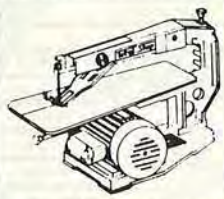
New "Morse-Taper" Quick Change Head
No other machine on the market offers the ease of conversion from planing to molding (or sanding) as the Woodmaster. Cutterhead bearings remain factory-set at all times...and changeover can be done in less than 10 minutes!

WOODMASTER TOOLS, INC., DEPT. PW14
2908 OAK • KANSAS CITY, MO 64108
Or Phone 1-800-251-4888 Ext. 2314

☐ **YES!** Please rush me your FREE Information Kit plus details on your 30-DAY FREE TRIAL GUARANTEE!

NAME _____
ADDRESS _____
CITY _____
STATE _____ ZIP _____

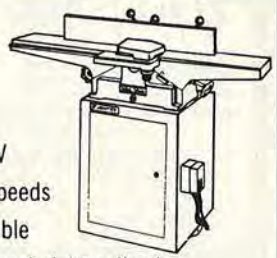
Total Shop®



15" Scroll Saw

- Comparable to Hegner or Delta
- Fully adjustable table
- 2" depth of cut/3/4" stroke
- 110V
(Shipping and handling $20.00)

$199.00



6" Heavy Duty Jointer

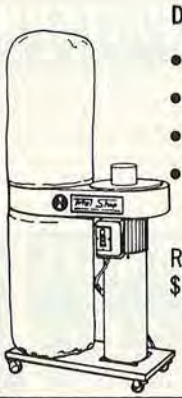
- 3/4HP, 110V
- Adjustable speeds
- Fully adjustable
- 190 lbs. (ships freight collect)

Reg. $499.00 **$299.00**

8" Industrial Quality Jointer

- 1½HP, 220V
- 65" length
- 397 lbs. (ships freight collect)

Reg. $795.00 **$575.00**



Dust Collector

- 1HP, 110V
- 4" inlet
- Industrial quality
- Compact size
(Shipping and Handling $30.00)

Reg. $398.00 **$199.00**

Total Shop®
Dept. Q
P.O. Box 16297/Greenville, SC 29606

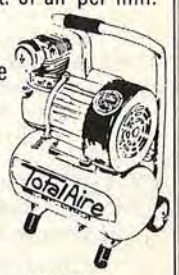
Name _____
Address _____
City _____
State/Zip _____
Phone _____

30-Day Money Back Guarantee
1-Year Warranty

Call Toll Free 1-800-845-9356 or in S.C. 288-4174

TOTAL AIRE Air Compressor

- ½HP with 3.3 cu.ft. of air per min.
- 150 PSI capacity
- Wheels and handle for easly moving
- Can be used with air tools for spray painting, pumping tires, cleaning shop, etc.



(Shipping and handling $20.00)

Reg. $419.00 **$199.00**

FREE 8" JOINTER !

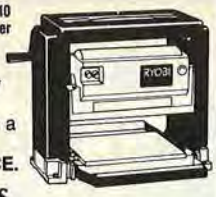
Makita Model 2040
Thickness Planer
15 ⅝" Cutting Width
2 HP Motor

Buy Makita's famous Model 2040 thickness planer at a list price of $1,930 and we'll include Makita's Model 2020 8" long-bed jointer (list $1,700) free. Take advantage of this limited offer to own a great pair of machines at an unheard-of price.

FOB Lexington, Ky.

RYOBI

AP-10
Thickness planer



WE DIDN'T BELIEVE IT until we actually used it. This tool works really well — as well as any planer we've used, except on a smaller scale. 10" width of cut, 13 amp. motor powerfeed. **CALL FOR OUR PRICE.**

RYOBI SPECIALS

Model	Description	List	Sell
AH115	Jointer-Planer	$2499	$1225
BS360NR	Resaw Bandsaw	2099	1149
RA2500	Radial Arm Saw	619	369
R501	3HP Router	299	159
R151	1HP Router	169	89
TR30U	Trimmer	134	74
BD1025	Cordless Clutch Drill	179	99

Prepaid Prices on Ryobi

THE XYLOPHILE'S COMPANY
138 E. Loudon Ave. • Lexington, Ky. 40505
(800) 354-9083 M/C VISA

FREUD SPECIALS

WC-106	6 Pc. Chisel Set	27.00
WC-110	10 Pc. Chisel Set	47.00
TT-108	8 Pc. Turning Tool Set	47.00
90-100	15 Pc. Router Bit Set	134.00
92-100	26 Pc. Router Bit Set	284.00
94-100	5 Pc. Router Cabinet Set	179.00
FB-100	16 Pc. Forstner Bit Set	159.00
EC-900	5 Pc. Shaper Cabinet Set	289.00
EC-209-213	Raised Panel Cutters	77.00
EC-260	¾" Cabinet Door Set	157.00
Sawblades		
LM72M	10", 24T, Rip Blade	34.00
LU73M	10", 60T, ATB Cutoff	34.00
LU84M	10", 50T, Combination	36.00
Set of Three Above		99.00
LU82M	10", 60T, Triple Chip	42.00
LU85M	10", 80T, Super Blade	59.00
DS306	6" Dado	90.00
DS308	8" Dado	99.00

We carry the entire line of Freud shaper cutters and router bits at discounts up to 30%. Please call for prices on these items.

Freud Orders over $35 are prepaid.

Wood Moisture Meter

- Avoid Moisture Problems
- Protect your Masterpiece

Mini-Ligno
$110 only

Pocket-Size: 1"x2¾"x5½"
Incl. Case, Batteries, and Pins for ⅜" and ⅝" Measuring Depth

also from Lignomat:
Mini-Ligno E
Range: 6, 7,..,36%

Easy to use, sturdy instrument for the professional woodworker or serious hobbyist. Great for lumber, veneer, fiberbrds. Ask for free catalog on all moisture meters and accessories for kiln drying. Don't waste money, time on wet wood, order a moisture meter now.

Lignomat USA Ltd. P.O. Box 30145 bh
503-257-8957 800-227-2105 Portland, OR 97230

CLOCK COMPONENTS

QUARTZ CLOCK MOVEMENTS

WE FEATURE BATTERY, PENDULUM, CHIME QUARTZ MOVEMENTS OF ALL TYPES. URGOS, HERMLE, GRANDMOTHER, GRANDFATHER CABLE DRIVE AND CHAIN DRIVE, KEY WIND MOVEMENTS OF ALL TYPES. 400 DAY CLOCKS, MUSIC BOX MOVEMENTS, FLAT AND BEZEL TYPE DIALS—PLUS A VAST ASSORTMENT OF WEATHER INSTRUMENTS. HUNDREDS OF CLOCK ITEMS. VERY COMPETITIVE PRICES. WRITE OR CALL FOR FREE 75 PAGE CATALOG. $2 FOR AIR MAIL.

THE QUARTZ FITUP

THE MINI QUARTZ

Send To:
NEWPORT ENTERPRISES INC.
2313 W. Burbank Blvd.
Burbank, CA 91506
818-845-0555

SWINGING CRADLE

EASY TO MAKE WITH

Full-Size Plan

Authentic spindle design straight out of Colonial America. Plans show alternate construction with panel sides. Perfect for baby or use for magazines. Size: 20" x 39" x 30" high.

Order plan #166 ..... $9.00

CATALOG
180 diff., full-size prof. **furniture plans—$2.00**
(catalog free with order)

FURNITURE DESIGNS, Dept. BS-96
1827 Elmdale Ave., Glenview, IL 60025

BRANDING IRON

For hard and soft wood

$27.00
Plus $2.00 for shipping and handling
Nebr. residents add correct sales tax

GUARANTEED

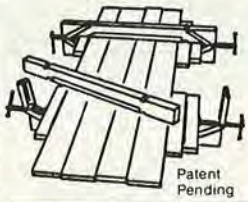
- **Shipped in 1 week**
- Solid brass head — deep cut letters
- First Line: HAND CRAFTED BY — as above
- 2nd line: Your choice — 20 characters/spaces max.
- Compact size
- As above but with 3rd line — $37.00 + $2.00
- Other models and free brochure available

Order anytime by phone or mail

NOVA TOOL CO.
4533 Colfax Circle, Dept. BH86
P.O. Box 29341, Lincoln, NE 68529
(402) 464-0511

VISA MasterCard

EDGE JOINING CLAMP



Patent Pending

"DUO-CLAMP"
PROHIBITS BOWING
• **FAST** •
• **EASY** •
BUTCHER BLOCKS TOO!

Holds boards flat while squeezing out excess glue
A perfect mate every time

• **NO DOWELING** • **NO PLANNING**
30 DAY MONEY BACK GUARANTEE

16" Capacity $34.50
26" Capacity $37.50
36" Capacity $40.50
MASTER CARD/VISA
FREE U.P.S.

Send for FREE info:
MARK PRODUCTS
Box 46143
Dept. W8
Bedford, Ohio 44146

EXTENSIVE EXOTIC & DOMESTIC INVENTORY — FLITCH-CUT LUMBER OUR SPECIALTY

DOUSSIE
AFRORMOSIA
ZEBRAWOOD
AMAZAKOUE
PURPLEHEART — GONCALO ALVES
MORADO — ANDIROBA
BUBINGA — IMBUYA
PADOUK — PALDAO
WENGE — SAPELE
RED OAK — WHITE OAK
CHERRY
POPLAR
WALNUT

Wyndham Woods

THICK VENEERS FOR BENDING — THIN WOOD FOR SMALL PROJECTS

ARCHITECTURAL QUALITY EXOTIC & DOMESTIC VENEERS
For the World's Finest Lumber & Veneer at Reasonable Prices send $1.00 for Brochure & Price List to:
WYNDHAM WOODS, P.O. Box 506
Ellettsville, IN 47429 / PH. 812-334-7735

LOW PRICES • HIGH QUALITY
Toll Free Phones! • 1-800-624-3938
In Ill. 1-800-358-4208

Love - Built Toys

The Toymaker Supply Co.
105 Weiler Rd. T34
Arlington Hts., IL 60005

For Volume Purchases of Quality Toy Parts..Write or Phone Today For Free Catalog!

WOODWORKERS! Sand like professionals, quickly and beautifully

Model #DD-63
Gives quick and excellent results on contoured-shaped parts.

#B-12 Brush Head sands mouldings and intricate carvings without losing detail or shape of the part.

Everything we sell is industrial quality. Buy the complete unit or just the Brush Head and/or Pneumatic Drum and build your own.

Professional results in no time at all.
Write or use IWWF for free information.

Sand-Rite MANUFACTURING CO.
1611 N. Sheffield Ave.
Chicago, IL 60614
312-642-7287

89 JIG SAW PATTERNS

• UP TO 21" HIGH •

89 FULL SIZE patterns of beautiful Wall & Corner Shelves, Bird Houses, Action Toys, Novelties, Lawn & Animal Figures, Flying Duck, Sprinkling Girl PLUS dozens of other easily made things. Just trace, cut out & paint! Order the JIG SAW PACKET today. Only $7 Postpaid 1st Class.

MASTERCRAFT PLANS WEST, Dept.94H
PO Box 625, Redmond, WA 98073

Garden WINDMILLS

FULL SIZE PATTERNS

Beautify your lawn with these picturesque old windmills, 4 to 6 ft. high. Easy to make with full size patterns and step by step instructions. Only $7.00 Prepaid 1st Class for WINDMILL PACKET with patterns for both.

MASTERCRAFT PLANS WEST, Dept.919H
PO Box 625, Redmond, WA 98073

Have a problem with your subscription?

We want to solve it to your complete satisfaction, and we want to do it fast. Please write to: Robert Austin, *Better Homes and Gardens® WOOD*, P.O. Box 10628, Des Moines, Iowa 50336.

You can help us by attaching your magazine label here, or copy your name and address as it appears on your label. Send this along with your correspondence.

Name
Address
Apt. #
City
State
Zip

Moving?

Simply attach the mailing label from this magazine and write in your new address below. (Please allow 4-8 weeks.)

Your New Address Goes Here

Name

Address Apt. #

City

State Zip

Subscription Rate:

6 issues — 1 year — $18. Add $6 for Canadian or foreign postage.

☐ Renewal ☐ New Order

For Fast Service...

...it is better to write us concerning your problem and include the magazine label. Also, address changes are handled more efficiently by mail. However, should you need to reach us quickly the following toll-free number is available:

800-247-2504

Better Homes and Gardens®

WOOD

P.O. Box 10628 • Des Moines, Iowa 50336

Precision Movements
features
"CUT-OUT" CLOCK KITS
Everything You Need To Make A Clock ... In One Package!

Each "Cut-Out" Clock Kit Includes:
- QUARTZ MOVEMENT - ⅜" SHAFT
- HOUR, MINUTE AND SECOND HANDS
- ADHESIVE BACKED CLOCK FACE
- SAW TOOTH HANGER
- SOLID PINE CLOCK BLANK
- ILLUSTRATED INSTRUCTIONS

*YOUR CHOICE... ONLY $10.95 EACH**
Suggested Retail Value $17.95 EACH

UNICORN 7⅞" x 8½" Part# Y3UNICMP
DEER 7⅞" x 11⅝" Part# Y3DEERMP
(Add $2.50 * Shipping & Handling) PA Residents Please Add 6% Sales Tax

New FALL 1986 CLOCK CATALOG
Presenting Our Full Line Of Clock Movements - Supplies & Accessories
IN FULL COLOR
Phone or Write For Your Copy Today!
215-967-3156

P.O. BOX 689 • DEPT. G • EMMAUS, PA 18049

THIN HARDWOOD PRICED RIGHT

Clear • Kiln-dried • 2 Sides Surfaced
3" to 10" Widths • 3' to 5' Lengths
20 sq. ft. Packs, Random Widths & Lengths

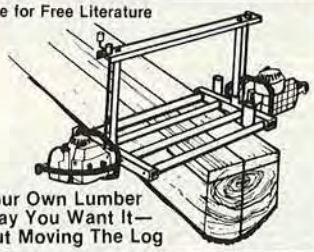
½" red oak...$32.00 pkg.
½" walnut.....$40.00 pkg.
½" pecan.....$25.00 pkg.
¼" & ⅜" also available at same price.

Price includes UPS delivery.
Send Check or M.O. with order.

HARDWOODS OF ILLINOIS
RR4, Box 618, Mt. Vernon, IL 62864

PORTABLE SAWMILLS

Write for Free Literature



Cut Your Own Lumber The Way You Want It— Without Moving The Log

INFORMATION HOTLINE (201) 744-6110
SPERBER TOOL WORKS
Box 1224W • W. Caldwell • N.J. • 07007

The Japan Woodworker's Catalog is . . .

loaded with the best tools you can get your hands on. In our catalog you will find a complete selection of Japanese tools for the woodcarver, carpenter and cabinetmaker. Send $1.50 for our catalog and supplements during the next two years.

THE JAPAN WOODWORKER
1731 Clement Ave., Alameda, CA 94501
Phone (415) 521-1810

HUMFREY'S FOR **EXCALIBUR II**

EXCALIBUR II PRECISION SCROLL SAW

SHIPPED UPS PREPAID SUMMER SALE
$495. U.S.*
NO OTHER CHARGES
*Electrics extra

- 1400, 800 & 400 Strokes/PM
- 19" throat, up to 2" thick
- Accepts all 5" blades
- Table tilts 45° left & right
- Cuts wood, plastics, metals etc.

HUMFREY'S ORDER PHONE IN THE U.S. CALL TOLL FREE
1-800-387-9789

VISA MasterCard

J. Philip Humfrey International

3241 Kennedy Road, Unit 7 Department WM 9/10
Scarborough, Ontario M1V 2J9 (416) 293-8624

Please rush me details of the EXCALIBUR II Precision Scroll Saw.

Name _____
Address _____
City _____ State _____ Zip _____

Turning into a better craftsman can be as simple as turning the pages of our new catalog.

Our new 244 page catalog is filled not just with pictures of great hand and power tools, but carefully written specs, detailed illustrations and recommendations from craftsmen who've spent much of their lives making, using and testing tools.

You'll know what they look and feel like, and you'll know how they fit your needs.

We believe you're not the average craftsman. So why should we give you an average catalog?

GARRETT WADE COMPANY — The Yankee Wood Craftsmen

Garrett Wade Co., Dept. 127
161 Ave. of Americas, N.Y., N.Y. 10013

Please send me your 244 page catalog of wood working tools, machinery and accessories. Enclosed $3.00.

Name_____
Address_____
City_____
State_____ Zip_____

Information

Print this article

WORTH WRITING FOR

You can get useful ideas and product information by mail. Use the coupon in this section to order your choice of literature listed below.

SCROLL SAW AND LATHE INFORMATION — More than 20 pages of information, including full-color photos, on HEGNER precision scroll saws, HEGNER lathes, and HEGNER duplicators. Find out why these machines are considered state of the art, and what to look for when shopping for scroll saws or lathes. AMI, LTD. $1.00. *Circle No. 2.*

WOODWORKING PROFESSIONALS ONLY — Now save 50% on machinery, 70% on operating costs! How? By using the world's finest production quality universal machine. Commercial durability, utmost precision, set-up in seconds. No other tool combines usable capabilities like FELDER. Thousands sold all over the world. Now available in America through AMI. Send for brochure. AMI LTD. $1.00. *Circle No. 3.*

OVER 500 WOODWORKING DESIGNS — We now offer thirty-nine packets of blueprint plans and full-size patterns with both the home and commercial craftsman in mind. Enjoy making toys, games, children's items, whirligigs, folk art, plaques, magazine racks, shelves, kitchen and household items, birdhouses, plant stands, and more. Simple enough for the beginner, fun and profitable for the pro. Send for illustrated brochure plus sample pattern. ACCENTS IN PINE. $2.00. *Circle No. 12.*

THE AMERICAN WOODWORKER MAGAZINE — offers projects on beginning, intermediate, and advanced levels in each issue. Also included are in-depth instructional articles on all phases of woodworking, plus general interest articles. We will offer plans for jigs and fixtures for your shop. A one year subscription is only $12.00 (inside U.S.). Send for our brochure giving complete details plus information on the new tool buyer's guide for woodworkers. THE AMERICAN WOODWORKER. $1.00. *Circle No. 45.*

TOOL CATALOG — Available from Anglo American Enterprises, the world famous Recod Marples Tool Catalog featuring the finest woodcrafting tools available. Send for catalog and price list. ANGLO AMERICAN ENTERPRISES CORP. $2.00. *Circle No. 50.*

WOODWORKERS' PLANS AND SUPPLIES — Wood projects are simplified with the high quality plans, specialty hardware and other supplies offered by Armor Products. Over 100 plans are available for making toys, desks, clocks, pool tables, lamps, chests, and other furniture. Movements, dials, moldings, ornaments, and hardware also available. ARMOR PRODUCTS. $1.00. *Circle No. 60.*

WOOD ENTHUSIASTS — Our catalog is loaded with products. Select domestic, exotic, and dyed veneers, inlays, marquetry patterns and kits, game boards, picture faces, carving sets, clock kits, veneering tools, power tools, glues, finishes, "how-to" books, sculpture kits, ducks, birdhouses, furniture plans, and more. Send for our woodworker's catalog. Price of the catalog is deducted from your first order. ARTISTRY IN VENEERS, INC. $1.00. *Circle No. 65.*

DISCOVER VENEER — Artistry in Veneers' do-it-yourself guide to veneering shows you how simple it is to master this craft. Our color brochure identifies the most popular species of veneer and educates you on veneer matching, taping, and gluing. Send for your introductory brochure. ARTISTRY IN VENEERS, INC. 50¢. *Circle No. 66.*

THE FIRST LINE IN JIG SAW — BOSCH — Bosch gives professionals a selection of top-of-the-line jig saws as well as an impressive selection of blades. Wholesale prices. Send for literature. AVIATION INDUSTRIAL SUPPLY. 50¢. *Circle No. 85.*

CATALOG OF PLANS AND KITS — A selection of functional projects, unique gifts, and decorative pieces for home or office. Included are a sandpile scooper, super bunk beds, miniature two-story outhouse, birthday calendar, and many more. See our ad elsewhere in this issue. BALLART DESIGN. $1.00. (Refundable) *Circle No. 100.*

CEDAR CHEST KITS — 32-page, full-color catalog of our pre-cut, ready to assemble kits featuring our solid wood aromatic cedar chests. We also carry a full line of kits for gun cabinets, tables, chairs, etc. in a variety of solid woods, including walnut and cherry. All kits come complete with instructions and hardware needed for assembly. BEDFORD LUMBER CO. $2.00. *Circle No. 110.*

EVERYTHING FOR THE WOODWORKER — Makita, Hitachi, and Black and Decker power tools at well below list prices. Plus a wide selection of woodworking supplies, including candle cups and shaker pegs. Price of catalog is refundable with order. BENNY'S WOODWORKS. $2.00. *Circle No. 115.*

SHIP MODEL KITS — Fully illustrated 32-page catalog of scale ship model kits from America's oldest model ship company. Build a beautiful museum quality model ship with the simplest tools and average skills. BLUEJACKET SHIP CRAFTERS. $2.00. *Circle No. 130.*

ABOUT COATED ABRASVIE PRODUCTS — A brochure dealing with a better understanding about the basics of coated abrasive products. Topics include: abrasive materials, grading, adhesives, coating, trade names and identification, general use, and storage. The basic information is presented clearly and simply. Lots of good useful information - both interesting and informative. BRADY SUPPLY CORP. $1.00. *Circle No. 144.*

FREUD HAND TOOL CATALOG — An exciting new line of precision hand tools. These tools reflect the fine quality of craftsmanship, durability, and performance that you have always associated with Freud products. From choice boxwood to chrome vanadium steel, these tools exceed all expectations of precision woodworking instruments. BRADY SUPPLY CORP. $1.00. *Circle No. 145.*

SAFETY IS PROFITABLE — The cost of accidents has rapidly escalated in the form of insurance premiums, medical costs, etc. Powermatic introduces an unprecedented safety use and productivity improving plan for the safe use of its products, and safety improving accessories at new special low prices. A program you will profit from. BRADY SUPPLY CORP. $2.00. *Circle No. 146.*

EXTRAORDINARILY BEAUTIFUL HANDTOOLS — Solid brass and exotic rosewood handtools built in America by Bridge City Tool Works. Each precision tool featured in this 4-color catalog is manufactured to very demanding tolerances. Each is handmade and flawlessly finished. Bridge City Tool Works makes tools for people who care, the discerning craftsman. Send for 1986/87 catalog. BRIDGE CITY TOOL WORKS. $1.00. *Circle No. 147.*

PERSONALIZED BRANDING IRON — Personalize your finished projects with BrandMark's solid brass branding iron. Easy to use, lasts for years, satisfaction guaranteed. Makes an ideal gift. See ad elsewhere in this issue or send for brochure. BRANDMARK. 25¢. *Circle No. 148.*

WOODWORKING EQUIPMENT — More than 75 pages filled with woodworking machinery, portable power tools, and supplies. Detailed information on all types of equipment for professional and home shop needs. Powermatic, Rockwell, Hitachi, Makita, and more. BRATTON MACHINERY AND SUPPLY, INC. $4.50. *Circle No. 150.*

CANE AND BASKET SUPPLIES — Every item used in caning and basketry is pictured in this new catalog for hobbyists and others interested in caning, rushing, etc., for either fun or profit. CANE & BASKET SUPPLY CO. $1.00. *Circle No. 230.*

CARBIDE TIPPED ROUTER BITS AND SHAPER CUTTERS — Over 200 router bits and shaper cutters displayed in catalog featuring 6 piece cabinet sets, 3 piece ½ in.shank router bit panel raising system, and 3 wing industrial shaper cutters. Shaper cutters available in ½ in. through 1-¼ in. bore with bushings. Router bits offered in ¼ in. and ½ in. shank. CASCADE PRECISION TOOL CO. $1.00. *Circle No. 245.*

CLOCK MOVEMENTS CATALOG — The 55-page catalog contains over fifteen different quartz clock movements, including pendulum, strike, and chime movements. Also shown are dials, hands, numerals, and accessories. It features movements made in Japan by the world's largest producer of quartz timepieces. CAS-KER CO. $1.00. *Circle No. 250.*

MAKE WOODEN TOYS — Whirligigs, doll houses, swing sets, classic autos, furniture and crafts with our plans, kits, parts, and supplies. For all skill levels. Also parts (toy, craft, game, and furniture) and dimensional lumber in maple, oak, walnut, and cherry along with specialty brass parts, tools, books, organizers and finishes. Send for color catalog subscription. CHERRY TREE TOYS, INC. $1.00. *Circle No. 258.*

MAKE WOODEN CLAMPS — Save 60%. Kits and plans for 8, 10, and 12 in. wooden handscrew clamps. Acme threaded steel rods, components, handles and full-sized plans provided. Kits also available with uncut and precut maple jaws. You decide how much you want to save. Also available are hundreds of plans, kits, parts, and supplies for wooden toys and whirligigs in our beautiful color catalog. CHERRY TREE TOYS, INC. $1.00. *Circle No. 259.*

UNIQUE, VERSATILE TOOL AND PARTS STORAGE SYSTEM — features tool panels, cabinets, and workbench attachments to safely store and organize your valuable hand and power tools and small parts. This very functional system offers inter-changeable tool hooks, bins, and shelves to let you custom-tailor your work area. Ideal for woodworking and hobby applications. CONCEPT 2001, INC. Free. *Circle No. 262.*

WOODWORKERS TOOLS AND MATERIALS — 116-page catalog offers fine hardwoods, veneers, inlays, picture molding, wood finishes, carving blocks, cabinet hardware, and cane. Specialty woodworking tools, shop equipment, plans, instruction books. ALBERT CONSTANTINE AND SON INC. $1.00. *Circle No. 270.*

LOOKING FOR PIERCED TIN? COME TO THE SOURCE! — A 96+ page catalog plus color brochure introduces you to a treasury of pierced metal panels ready to install in kitchen cabinets, cupboards, piesafes, and other projects. Available in a large variety of sizes, 16 different finishes, over 150 patterns — or all the materials you need to create-it-yourself. Tin, zinc, copper, brass, kits, lanterns, furniture plans, and more! Artistry in pieced tin. COUNTRY ACCENTS. $3.00. *Circle No. 272.*

BUILD HEIRLOOM CLOCKS — Now create beautiful heirloom quality clocks right in your own home. Choose from magnificent chiming grandfather clocks to charming wall clocks. 32-page catalog also offers a selection of music boxes, music movements, traditional barometers, and a huge variety of quartz movements and dials for custom clock building. Satisfaction guaranteed. CRAFT PRODUCTS CO. Free. *Circle No. 273.*

WOODWORKERS! HELP CELEBRATE OUR 55TH YEAR OF SERVICE — Send for our new 148-page Craftsman 1985 catalog. 42 varieties of choice hardwoods 1/64- in. to 4-in. thickness. Fine hardwood veneers, tools, moldings, trim, marquetry inlays, upholstery and lamp supplies, finishes, clock kits, and hard-to-find hardware. 4,000-plus items for your projects. CRAFTSMAN WOOD SERVICE CO. $1.00. *Circle No. 275.*

WOODWORKERS FULL-LINE CATALOG — 152 pages of fine woodworking and carving tools; ¼ in. thick to 4 in. thick hardwoods, veneers, plywood, hardware, wood finishes, decoy carving supplies. Complete full-line catalog. CRAFTWOODS. $3.00. *Circle No. 285.*

WOODEN TOYS FOR FUN AND PROFIT — Build quality toys from plans that reflect close attention to all dimensions and instructions needed for you to make the complete toy. A 12-page illustrated catalog shows plans for modern-style trucks, pull toys, trains, rocking horse, and more. D & E CRAFTS. $1.00. *Circle No. 300.*

INDUSTRIAL QUALITY CUTTING TOOLS — DML offers 1,002 different cutting tools, each engineered for a specific task, all made in America. Four information-filled brochures detail carbide-tipped saw blades, bits, and cutters: concise copy explains applications, photos show tool configurations, and charts list sizes. DML, INC. $1.00. *Circle No. 303.*

INDUSTRIAL QUALITY CUTTING TOOLS — Three large, colorful wall posters keep DML's huge line of carbide-tipped cutting tools close at hand for easy reference. Separate posters for saw blades, shaper heads (with diagrams of each cut), and router bits. Each features graphic displays of the tools, capabilities, and sizes. DML, INC. $3.00. *Circle No. 304.*

ANTIQUE REPRODUCTION WOODEN TELEPHONES — Dakota Woodworks is the country's largest manufacturer of antique reproduction wooden telephones. Kits available in two skill levels, one with plans and hardware, one with precut oak cabinetry and hardware. All hardware is solid brass. Both kits include complete solid-state electronics package and detailed instructions. Send for four-color 12-page catalog. DAKOTA WOODWORKS. $2.00. *Circle No. 308.*

SIMPLE SYSTEMS FOR WOOD STAINING AND FINISHING — A 24-page, 4-color booklet gives plenty of helpful tips for better results. Included are tips on how to apply a bartop finish in one day, prevent wood from yellowing, create stain colors, apply water clean up stains and finishes, and more. DEFT, INC. 50¢. *Circle No. 315.*

DELTA MACHINERY CATALOG FOR BUILDING TRADES AND HOME SHOPS — a source for quality wood and metalworking machinery for the do-it-yourselfer and professional craftsman. A complete line of saws, drill presses, grinders, jointers, lathes, shapers and accessories. Send for 44-page catalog. DELTA INTERNATIONAL MACHINERY CORP. Free. *Circle No. 317.*

BUILD IT YOURSELF — Why buy it when you can build it? Illustrated catalog of hundreds of interesting and fun items you can create yourself for personal use or profitable sale. Our 1986 catalog contains toys, games, plaques, puzzles, birdhouses, planters, accent furniture, and much more. All patterns are full-size blueprints — no enlarging is necessary. Simply trace and create. DESIGN GROUP. $1.00. *Circle No. 320.*

DUBUQUE CLAMP WORKS — The company serious about producing the BEST wood clamps/wood clamp kits. D.C.W. clamp and kits offer strength, durability, and reliability. Two kits available - metal hardware only or metal hardware plus maple jaws and handles. DUBUQUE CLAMP WORKS. 25¢. *Circle No. 345.*

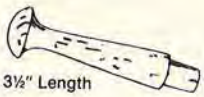
TO ORDER THESE BOOKLETS, USE COUPON ON PAGE 105

DOWELS - PLUGS - PEGS

Manufacturer Direct
Largest & finest selection Oak, Walnut, Hickory, Maple, Cherry, Mahogany, Teak, even Treated Dowels. Quantity discounts.

MIDWEST DOWEL WORKS, INC.
4631 Hutchinson Road
Cincinnati, Ohio 45248
(513) 574-8488

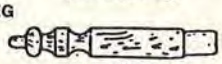
DOWELS
¼" - 2" Diameter



3½" Length

SHAKER PEGS
Hard Maple
Poplar
Oak, Red or White
Walnut
Also Mini-Pegs

DUTCH WALL PEG
Hard Maple
Oak
Walnut



4" Length

Catalogue on Request

A Complete New Combination Kit for Whittling and Carving By WARREN TOOL CO., INC.

BASIC WOODCARVING

Basic Woodcarving lesson book, prepared by the National Carvers Museum, teaches and illustrates proper carving techniques through clear instructions and simple projects.

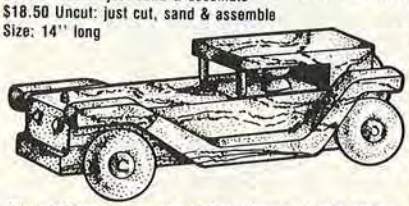
#COMBI-TCE $79.95 + $2.25 p&h
OUR FINEST COMBINATION WHITTLERS AND CARVERS KIT
Contents: 1 Redwood Box, 1-#CWH-R Rosewood handle, 1 #L-Palm Walnut handle, (one each) #PTV-1, #LBG, #SBG, #PTV-2, #STC, #STG, #SFTG, #SKU, Gouges, 1-#LD2 (Large Blade), #6SBL (6-Small Blades), 1-Leather Strop Block, 1-Abrasive Paper Block, 1-Instruction Booklet. All blades and gouges sold in their own plastic storage tubes to avoid damage to these honed ready-to-use tools.

WARREN TOOL CO, INC.
Rt. 1, Box 14A-W, Rhinebeck, NY 12572
Catalog 60¢ FREE with order • (914) 876-7817
N.Y. residents add 5.25% sales tax • Foreign shipping: "all foreign orders (including Canada) send MO in US funds plus additional $1.75 for P&H.

MAKE TOYS
AND WHIRLIGIGS

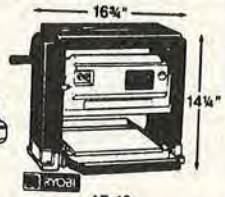
100's of plans, parts, kits, books, finishes & supplies for toys, whirligigs, classic autos, swing sets, doll houses, crafts & furniture. Also toy, craft, game & furniture parts in maple, oak, walnut & cherry. Bulk prices available. Color catalog subscription $1. (614) 484-4363

LIMO KITS
$24.00 Precut: just sand & assemble
$18.50 Uncut: just cut, sand & assemble
Size: 14" long



Cherry Tree Toys, Box 369-9, Belmont, OH 43718

THE SOURCE



JSE-60
Electronic Var. Spd.
Jig Saw

AP-10
10" Portable Planer

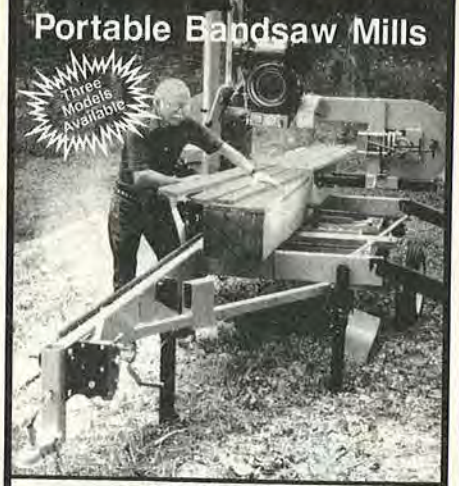
Both for $429 **$359** *Delivered*

Send $3.00 for the most COMPLETE catalog of fine hand tools & cabinet makers supplies !!!!! (refunded with first order)

CALL TOLL FREE 800-452-9999 In VA. 800-468-1778

7305 BOUDINOT DRIVE
SPRINGFIELD, VIRGINIA 22150

Wood-Mizer®
Portable Bandsaw Mills



• EFFICIENT •
less horsepower produces more lumber per log

• CUTTING CAPACITIES •
up to 33" long by 32" diameter

• PRECISE •
smooth surfaces and accurate dimensions

• SAFE •
guarded bandsaw blade

Prices from:
$3,995.00

For catalogs on our complete product lines, send $1.00 to:
Wood-Mizer® Products **Dept. QQ7**
A Division of Laskowski Ent. Inc.
8180 W. 10th St. Indpls, IN 46214 (317) 271-1542

From Europe . . . The Ultimate in

HISTORIC SHIP MODEL KITS.

Plank-on-frame Construction

World famous kits from Artesania Latina, Mamoli, Mantua/Sergal and more: large, magnificent replicas (many over 4 feet long!) with beautiful walnut and mahogany planking, fittings and details exquisitely cast in bronze, brass and rare hardwoods. Large scale plans, step-by-step instructions, all materials included.

Send for 88-pg. full-color catalog only $1.00

MAIL THIS COUPON TODAY!

MODEL EXPO, INC. Dept. BHW-96S
23 Just Road, Fairfield, N.J. 07007

Please send me a full color ship model catalog. $1.00 is enclosed.

Name _____
Address _____
City _____
State _____ Zip _____

VIDEO TAPE!

"TABLESAW TRICKS & JIGS"

WITH JON EAKES

This high quality production has 60 mins. of action featuring Tricks & Jigs on Tablesaws that even experts find informative.

Most tablesaw owners reach the maximum knowledge of their saws within a few weeks and never realize how much more there is to learn. Now you can get professional and instructional guidance from master craftsman Jon Eakes who is well known for his TV show "MR. CHIPS."

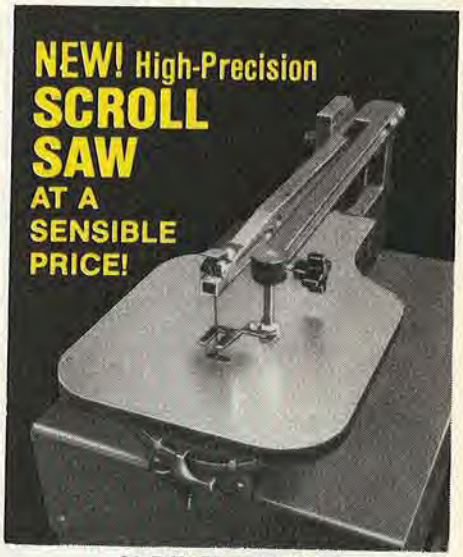
This is a high budget production!

INTRODUCTORY SPECIAL
Only $29.95 PREPAID TO YOU!
MODEL G1626 VHS or G1627 BETA
CALL YOUR ORDER IN & CHARGE IT!

MasterCard VISA

GRIZZLY IMPORTS INC.
P.O. BOX 2069, BELLINGHAM, WA 98227 (206) 647-0801

NEW! High-Precision SCROLL SAW AT A SENSIBLE PRICE!



30-DAY FREE TRIAL!

Use this high-precision saw to make hundreds of profitable, unusual items . . . toys, name-bars, filigree work, clocks, holders . . . the list is nearly endless! Because the Model 1600 cuts so smoothly, sanding is virtually unnecessary!

The new Woodmaster Model 1600 gives you a big 16-in. throat capacity, 2-in. cutting depth, a generous, oversize worktable, ball-bearing drive . . . and much more! Made in U.S.A. **Easy Terms.**

Send today for free information kit!
Phone Toll Free 1(800) 251-4888, ext. 2514

Woodmaster Tools, Dept. CW14
2908 Oak, Kansas City, MO 64108

Name _____
Address _____
City/State _____ Zip _____

DO YOU USE OR COLLECT
FINE HAND TOOLS?

ANTIQUE — OBSOLETE — MODERN

IF SO,

YOU SHOULD BE READING

THE FINE TOOL JOURNAL

PUBLISHED 10 TIMES ANNUALLY
1 Year Subscription—$15.00. Sample, $2.50

REMIT TO:
THE FINE TOOL JOURNAL
RD #2 — Dept. W86
Poultney, VT 05764

Send For New 68 Page Woodworkers Catalog!

783 handtools, supplies, patterns, accessories, veneers, doweling, hardwoods, toymaking, carving, turning supplies. Record-Marples, Kunz, Vt. Amer., Blum, Accuride, Schlagring, Solginen, U.S. Safety, General, Hempe, Boyne, Hirsh, Brinks-Cotton, Smit Whetstone, DMT, *Freud Tools, 20% Off.* Walnut, Cherry, Maple, Basswood turning and carving blocks. Solid Maple and spoked wheels, toyparts, pegs, etc. 101 popular veneers, burls, crotches, large flexibles, glue sheets, fancy faces, custom made veneers. Hurry! Send $1.00 today for your new 68 page color catalog and FREE gift offers!

Morgan Woodworking Supplies, Dept. WO6M16
1123 Bardstown Rd., Louisville, Ky. 40204

WOODWORKERS
Save on Wood - Tools - Supplies!

OVER 4000 ITEMS

Finest Dimensioned **HARDWOODS** and Quality **VENEERS**
42 Varieties 1/64" to 4" Thickness

Fast service on choice kiln dried Wood and Veneers, Moldings, Trim, Hand and Power Tools, Lamp Parts, Upholstery Supplies, Clock Movements and Kits, Hard-to-Find Hardware, Finishing Materials, Books . . . over 4000 items in stock! Craftsman—Woodworker's best friend.

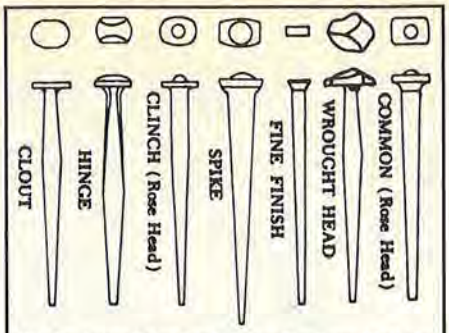
Send for New 1987 148 Page Money Saving **CATALOG**

FREE with Catalog
-$3.00 Discount Coupon
Good on First Order

OUR 57th Year

CRAFTSMAN WOOD SERVICE

Dept. K-106, 1735 W. Cortland Ct., Addison, IL 60101
Please enclose $1.00 to help pay postage and handling.



Old-Fashioned Cut Nails. The Tremont Nail Co. makes 20 varieties of cut nails using the old patterns, including rosehead, oval bung, and wrought-head. Sample kit containing one of each of the 20 patterns, a history of nails in America, and a price list is $3.75 ppd. Tremont Nail Co., Dept. W86, Box 111, Wareham, Mass. 02571.

BUILD THIS BLANKET CHEST
(17"Dx18"H x 36"W)

Order plans for this charming reproduction

This beauty will be admired by family and friends alike—especially when they see the great storage space that you've gained for your prized quilts and blankets.

The chest lid is hinged, and a pair of shallow drawers below add an authentic touch.

For complete building plans, including the know-how for duplicating the beautiful antiqued, painted finish, send $10 ppd. (Canadian residents please remit postal money order in US funds) to:

HAMMERMARK ASSOCIATES, Box 201-W-9, Floral Park, NY 11002.

Catalog available for $1.00 (refundable).
It's free with all Blanket Chest plans orders.

BUILD AN HEIRLOOM CLOCK

Finest Quality Available Kits, Movements and Plans

Write or Call for Catalog $2

1-800-328-6445

Kuempel Chime Clockworks

Dept. 011
21195 Minnetonka Blvd.
Excelsior, MN 55331

Serving clockmakers for 65 years

BAND SAW OWNERS!

A NEW TOOL is now available so you can make or repair any length Band Saw Blade in minutes!

This patented tool was developed for use in our own shop and has proven itself with thousands of high quality, true running splices.

Our splicer enables any craftsman to make up any length blade from economical coil blade stock QUICKLY and EASILY. The resulting silver brazed joint normally outlasts the service life of the blade.

Three models are currently available:

1C-001 ¼" to ¾" Blades.....$ 49.95 ppd
1C-002 ¼" to ⅜" Blades..... 49.95 ppd
1C-003 ⅜" to 1½" Blades..... 150.00 ppd

The tool comes complete with detailed instructions and supplies for approximately 100 splices.

We also carry additional supplies and OLSON band saw stock at reasonable prices.

Send L.S.A.S.E. for FREE information to:
NEW MILFORD SPECIALTIES CO.
Dept. BH, 24A South Main Street
New Milford, CT 06776
(203) 426-4276

TREMENDOUS SAVINGS — on finest quality tools, supplies, and accessories. Ryobi power tools, Everlast saw blades, Velepec router bits, Stanley hand tools, and more. Every item we sell is unconditionally guaranteed. DUSTY SPLINTERS ENT. $1.00. *Circle No. 350.*

DO-IT-YOURSELF LUMBER DRYING — This 22-page booklet *Kiln Chamber Construction Guide and Operation Manual* is designed for the individual wishing to dry his own lumber with a minimum investment of money, time, and space. Included are principles of dehumidification lumber drying, selection of which dryer is best for you, and kiln chamber plans and construction information. Also you will receive a questionnaire you can fill out and return. Once completed and returned you will receive free a computerized evaluation of your drying needs including investment considerations, operating costs, and payback. EBAC OF AMERICA, INC. $5.00. *Circle No. 400.*

MULTI-PURPOSE HOME WOODWORKING SYSTEM - The Emco Start-2000 is a table saw, band saw, moulding machine and disc sander and you can change operations in less than 30 seconds. One big 2 hp. motor does it all. With optional accessories you can do wood turning, mortising, horizontal drilling, and more. Send for four-color information. EMCO* USA. Free. *Circle No. 402.*

EdLco — STAY IN THE WOODS WITH US — Educational Lumber Company is pleased to offer you our new catalog, stacked with excellent buys at delivered prices. Available to you are over 21 species of imported as well as domestic hardwoods, softwoods, turnings, shorts, veneers. All our lumber is kiln dried. As school shop suppliers for 34 years, we know our lumber. It is top-grade. Send today and receive your BONUS GIFT: 4 new furniture designs. EDUCATIONAL LUMBER CO., Inc. $2.00. *Circle No. 420.*

MACASSAR EBONY — Professionals agree it's one of the world's hardest, rarest, and most beautiful woods. Macassar is coveted by woodworkers, artists, turners, and connoisseurs for its marbelike beauty and durability. We have the largest commercial selection of dimentional stocks in the U.S., from 1 to 8 inches thick and from 4 to 20 inches wide in random lengths to 9 ft. These are virtually unavailable elsewhere at any price. As a direct importer, we offer the lowest prices anywhere with no minimum orders. Send today for a complete description, inventory and price list (refundable with first order). ART EISENBRAND, INC. $1.00. *Circle No. 430.*

STATIONARY POWER MACHINES — Available from Elektra Beckum U.S.A. Corp. — advanced technology woodworking stationary power machines with the unique Unimex Motor interchangeable concept. For complete information on Jointer/Planer, Bandsaw, Dust Extractor, Spindle/Moulder, Lathe and Combi Saw send for our catalog. ELEKTRA BECKUM U.S.A. CORP. $1.00. *Circle No. 440.*

DO-IT-YOURSELF GRANDFATHER CLOCK KITS — Direct from world's largest manufacturer of grandfather clock kits. Prices starting at under $280 including West German Westminster chiming movement. Choose from black walnut, cherry, and oak. Other quality heirloom kits also available. Send for brochure. EMPEROR CLOCK CO. 50¢. *Circle No. 450.*

JAPANESE WOODWORKING TOOLS — A fine selection, including chisels and gouges, sharpening stones, saws, marking tools, hatchets, knives and garden tools, from some of Japan's most respected small toolmakers. Send for catalog. FINE TOOL SHOPS. Free. *Circle No. 495.*

RIPSTRATE SAVES FINGERS — for table saw and radial arm saw users. Brochure describes the RIPSTRATE and shows how it gives straighter cuts, speeds, the work, prevents kickbacks, and keeps hands away from the blade. FISHER HILL PRODUCTS. 25¢. *Circle No. 530.*

EXCELLENCE IN SHARPENING EQUIPMENT — This two-color, 56-page catalog from Foley-Belsaw Co. provides information on its complete line of equipment used for sharpening home, garden, and industrial shop saws and tools. Each machine is fully illustrated, complete specs and pricing information are provided. FOLEY-BELSAW CO. Free. *Circle No. 550.*

BEAT INFLATION AND HIGH LUMBERYARD PRICES — Turn trees into valuable lumber with the world-famous ONE-MAN PORTABLE SAWMILL. Goes right to the trees — turns out smooth, truecut lumber every time. No crew needed . . . no experience necessary. Send for booklet. FOLEY-BELSAW CO. Free. *Circle No. 551.*

FREE SUBSCRIPTION TO FOLEY-BELSAW NEWS BULLETION — For a limited time Foley-Belsaw will be giving away a 1-year subscription to their 64-page color publication. This publication includes stories and shop tips on all types of woodworking, tool sharpening, upholstery, engine repair, and locksmithing. The magazine, which is published six times a year, includes many special offers on Foley-Belsaw equipment. FOLEY-BELSAW CO. Free. *Circle No. 552.*

CUTTING TOOLS — Freud provides the finest in handtools and carbide cutting tools. From chisels and planes to saw blades and router bits. All this and more. Send for catalog. FREUD. $1.00. *Circle No. 560.*

WOODWORKING TOOL CATALOG — Complete 108-page catalog of hard-to-find hand woodworking tools. We have a stock of over 300 book titles and carry the Myford English wood-turning lathe. Also inventoried are wood finishes of all possible descriptions and carving tools unequaled anywhere in the United States. Send today for your ticket to woodworker's heaven. You too, can be turning out quality woodwork. FROG TOOL COL, LTD. $1.00. *Circle No. 570.*

INDUSTRIAL QUALITY BORING TOOLS NOW AVAILABLE TO YOU — W. L. Fuller Catalog 19B lists and illus-

trates a full-line of countersinks, counterbores, plug cutters, key hole router bits and other boring tools. You can combine pieces to drill for wood screw shank and head in one operation; then cut plug to cover screw head. W. L. FULLER, INC. 35¢. *Circle No. 575.*

FULL-SIZE FURNITURE PLANS CATALOG — Illustrates and describes over 180 plans for making furniture of quality found in museums and fine furniture stores. Plans include rolltop desk, cradles, dining tables, chairs, buffets, chests, gun cabinets, poker table, children's furniture, rocking horse, spinning wheels, and more. Bill of materials exploded drawings assist the woodworker. FURNITURE DESIGN, INC. $2.00. *Circle No. 585.*

HOMEOWNERS! RID YOUR PROPERTY OF UNSIGHTLY BRUSH PILES — with the amazing new SUPER TOMAHAWK chipper/shredder . . . exclusively from Garden Way. A powerful chipper, an efficient shredder, professional quality all included in our revolutionary new compact design. Send for literature. GARDEN WAY. Free. *Circle No. 587.*

1985-86 MASTER CATALOG — contains 228 pages of the finest in woodworking hand tools, machinery, and finishing supplies plus over 125 books. Of particular note is the selection of Japanese tools. The format is all four-color. GARRETT WADE CO. $3.00. *Circle No. 600.*

BEAUTIFUL WIPE-ON WOOD FINISHING — is explained in a booklet from a pioneer in wipe-on finishes since 1928. Wood finishes that produce a beautiful hand-rubbed finish without messy brushes or spraying. Specially formulated finishes that simply wipe-on with professional results everytime — guaranteed! Unlike conventional finishes these will never yellow, crack, or craze and they dry dustfree without runs. These finishes will bring out the natural beauty of the wood and never needs waxing. Send today for your wood finishing guide and products catalog. GENERAL FINISHES. 25¢. *Circle No. 630.*

PEG-1000 WHOLESALE — Polyethylene glycol green wood stabilizer, 10 lbs. $19.00 plus $3.20 shipping. Send for additional information. GENERAL FINISHES. 25¢. *Circle No. 631.*

WOODWORKERS — SAVE $500 ON TOOLS — Instead of buying expensive power tools, purchase kits that include the parts, nuts, bolts, and full-sized patterns, with replacement parts always available. GIL-BILT kits with 5-year guarantee for everything from bandsaws to belt sanders. Send for our catalog today. GILLIOM MFG. $1.00. *Circle No. 650.*

WOODWORKING MACHINERY CATALOG — Just arrived — 1985 full-color catalog of quality imported machinery and tools at low prices. GRIZZLY IMPORTS, INC. $3.00. *Circle No. 670.*

PLANERS — Heavy duty 15x6 in. planers with 2 hp. single-phase motors. Other woodworking equipment at low, low prices. Send for 1985 color catalog. GRIZZLY IMPORTS, INC. $3.00. *Circle No. 671.*

DUST COLLECTORS — for the small/medium size shop. Capable of handling from 1 to 3 machines at the same time. Priced within the home shop budget, yet capable of handling cabinet shopwork. Other woodworking machinery and tools — low prices. Send for catalog. GRIZZLY IMPORTS, INC. $3.00. *Circle No. 672.*

EASY DOES IT — with HTC'S power tool accessories. Discover many unique items, designed only with you, the dedicated woodworker, in mind. Make your machinery safer, increase the working area of your shop and accomplish nearly impossible tasks easily, quickly, accurately. Full-line catalog and price list. HTC PRODUCTS, INC. Free. *Circle No. 705.*

COUNTRY FURNITURE PLANS — Our catalog features 14 designs — from country pie safe to mini-barn. Also included are various products for the home workshopper. Send for our latest catalog. Price of catalog deducted from your first order. HAMMERMARK ASSOCIATES. $1.00. *Circle No. 710.*

THIN LUMBER — Approximately 20 species of thin lumber, widths vary up to ¾-in. Kiln dried. Turning squares. Send for price list. HARDWOODS OF ILLINOIS. 50¢. *Circle No. 715.*

EPOXIES FOR THE WOODWORKER AND HOBBYIST — Find out in two fact-filled pamphlets all about adhesive from the ancient blood glues to modern day epoxies and how they can help you in your woodworking projects. You will also receive a product literature package on the industrial formulators of Canada, Ltd. line of epoxies for woodworkers. HEADLAND INTERNATIONAL, INC. $1.50. *Circle No. 720.*

BRASS FURNITURE HARDWARE — This 36-page catalog shows over 500 items of authentic reproduction hardware from the 1700's and on into this century. This fine quality hardware is a must for the furniture craftsman working on a new project, or the refinisher who needs replacement hardware. HORTON BRASSES. $2.00. *Circle No. 750.*

NEW 1986 CATALOG OF SHAPER CUTTER PATTERNS — For the convenience of the distributor and/or end-user, L.R.H. Enterprises, Inc. has duplicated in actual size, 600 different shaper cutter patterns in an easy-to-read catalog. This catalog is excellent for quick reference and functions as a guide for the many cutter details used in the cabinet making and furniture manufacturing industries. Catalogs include a retail price list. L. R. HUBERT SAW. $2.00. *Circle No. 765.*

IF YOU ARE INTERSTED IN FINE WOODWORKING — you will not find better machinery than that sold by J.P. Humfrey Ltd. For example, we have 10-in. general tablesaws (2 HP, magnetic switch, lever-lock fence) available at $1,295 FOB New York. Send for brochure. J. PHILIP HUMFREY LTD. $1.00. *Circle No. 770.*

START SMALL BUSINESS WITH NEW SCROLL SAW — The Excalibur precision scroll saw from Canada can turn your workshop into a profit center. Make toys and puzzles, do intricate marquetry work or detailed cabinet work with these "operator friendly" machines. Hundreds sold in the U.S. already. Save, buy direct, from $495. up. Complete project patterns and plans available. Send for brochure. J. PHILIP HUMFREY LTD. $1.00. *Circle No. 771.*

BUY YOUR SANDING BELTS DIRECT FROM THE MANUFACTURER — Industrial Abrasives is the company that gives you six free belts with every dozen ordered. But, sanding belts are not the only product we have to offer. In our catalog you will find many specialty items not readily available in your hardware store. Price of catalog refunded with first order. INDUSTRIAL ABRASIVES CO. $1.00. *Circle No. 780.*

THE CUSHION CONTOUR SANDER — is a new concept in pneumatic drum sanding. Sanding sleeves are slid over an air bag (inflated with a hand tire pump) on an arbor to mount it between centers on a wood lathe. Drum effectively takes on profiles, curves, and bevels practically eliminating flat spots and chatter marks. INDUSTRIAL ABRASIVES CO. Free. *Circle No. 781.*

THE FINE TOOL JOURNAL — Published 10 times per year, this publication will keep you up to date with the many aspects of the world of antique and obsolete hand tools. Tools are offered for sale, books on tools are reviewed and sold, auctions are reviewed, articles on identification, values, and history. Send for sample copy. IRON HORSE ANTIQUES, INC. $1.50. *Circle No. 800.*

TOOLS—ANTIQUE AND USED — Quality, older hand tools for collectors and woodworkers. Many pre-1960 Stanley Tools. Hundreds of scarce planes, spoke-shaves, scrapers, drawknives, and other useable tools available. Illustrated tool lists published 5 times a year. Send for current list. BOB KAUNE. $1.25. *Circle No. 1020.*

PROFESSIONAL SAFETY PRODUCTS — A complete catalog of personal protective devices and work clothing available at discounted prices. Products include eye and ear protection, gloves, boots, hats, aprons, work clothing, and more. Every product is sold satisfaction guaranteed. KENCO SAFETY PRODUCTS. 25¢. *Circle No. 1023.*

QUALITY CLOCK KITS AND PLANS — Handmade and semi-assembled of carefully selected ¾ in. cherry, oak, or walnut with beveled glass. Or build from "scratch" using

POWER FEED
MODEL 804
PLANER/MOLDER

Complete With Motor and Ready To Go

FULL TWO YEAR FACTORY WARRANTY

FOLEY BELSAW

FACTORY DIRECT FROM FOLEY BELSAW

ACT NOW AND PAY ONLY $24.96 per mo.

TRY OUR PLANER FOR 45 DAYS

Use it in your own shop... Work it as hard and as much as you like... And if you don't like it, just send it back for a full refund.

We're making this offer because we're convinced that once you have the experience of using a precision Planer/Molder in your shop you won't know how you ever got along without it.

This offer is being made for a limited time only on the World Famous Foley-Belsaw Model 804 Planer. Just check the specs... you'll see why dollar-for-dollar it's the best buy ever on a Foley-Belsaw Planer/Molder.

45-DAY TRIAL

Use the Model 804 Planer/Molder in your shop for a **FULL 45 DAYS.** If you are not entirely satisfied, just return it freight prepaid and we will refund all money paid towards the purchase price of the machine.

PLANING SPECIFICATIONS
Model 804 Planer/Molder

Maximum width stock	8"
Maximum depth stock	4½"
Maximum depth of cut	5/32"
Minimum thickness	1/4"
Feed speed	28-FPM
Cuts per inch	36
Planing bed length	28½"
Shortest piece (not butted)	7½"
Maximum depth of cut, molding	3/4"
Maximum width of cut, molding	8"
Motor	1 HP, 3450 RPM, 115v-ac

For FASTEST SHIPMENT Call
TOLL FREE 1 (800) 468-4449 Missouri Residents 1 (800) 892-8789 or 816/483-4200
Between 8:00 a.m. and 5:00 p.m. Monday through Friday

For mail-in orders, check the payment plan that fits your Budget and mail your order TODAY!

OR... Finance your Purchase with $54.90 down and pay only $24.96 a month for 24 months. 18% APR. Call **TOLL FREE** between 8:00 a.m. and 5:00 p.m. Central Time. We will establish your credit line on the spot.

☐ **FULL PAYMENT PLAN** — Send check or money order for total cash price ($549.00)... Shipping Charges will be collected upon delivery.

☐ **C.O.D. PLAN** — Send $54.90 deposit and pay balance due upon receipt of order plus C.O.D. Fee and freight.

☐ **VISA** ☐ **MasterCard** — Bill my Charge Card $549.00 and ship immediately. Shipping charges will be collected upon delivery.

Account No._____

Expiration Date_____

Signature_____

☐ **YES,** Please send me ( ) Model 804 Planer/Molder(s) at the limited time offer price of ONLY $549.00. I have marked my choice of payment plans indicated.

ORDER NO. AEBG40976

NAME_____

ADDRESS_____

CITY_____

STATE_____ ZIP_____

SALES TAX FOR RESIDENTS OF MO. 6.225%, MN. 6%

Please send to: FOLEY-BELSAW COMPANY, 90879 Field Bldg., Kansas City, MO 64111

WOODWORKER'S CATALOG

There are over 3,000 money-saving reasons why woodworkers rely on Constantine.

Unique products. Hard-to-find products. **3,000 woodwork items!** Everything important to people who like to **Build-Restore-Repair-Refinish**–and like to save money doing it. Cabinet or furniture wood? Choose from over 200 sizes and kinds. Beat up surface to cover? Choose from 150 richly-grained veneers. Plus 500 plans...cabinet hardware...96 How-To Books...118 carving tools and chisels... 76 inlay designs...and lots more for **One-Stop, Right-Price Shopping** without leaving home!

116 Page Catalog–Only $1.00
$2.00 refunded on 1st order.

CONSTANTINE Est. 1812
2054S Eastchester Road, Bronx, NY 10461

TEST YOUR IMAGINATION

Create Any Hollow Cylindrical Shape up to 12" dia. Cut flat wood into straight or angle rings, stack rings, glue, sand, & finish, *All* on your Ring Master.

ORDER YOUR *FREE* BROCHURE TODAY
1-800-854-9815
In Florida 305/859-2664

24-page project notebook—$2. Video tape demo VHS $20, refund on return.

P.O. Box 8527A, Orlando, FL 32856

RING MASTER

For information about placing an advertisement in *Better Homes and Gardens® WOOD* write:

Mark Hart
750 Third Avenue
New York, NY 10017

Or call collect:
212-551-7130

our detailed plans and trim pieces. Choice of quality movements. Established in 1916. KUEMPEL CHIME CLOCK WORKS. $2.00. *Circle No. 1070.*

AFFORDABLE INDUSTRIAL QUALITY SANDING MACHINERY — Conveyor-fed single and dual-drum thickness sanders available in four sizes, 12, 18, 24, and 36 inches. Virtually eliminates hand sanding and improves quality, precision, and finish of your work at the same time. Plus many other products to make you more productive. Illustrated catalog and brochures. KUSTER WOODWORKERS, INC. 50¢. *Circle No. 1080.*

FROM CURVES TO CORNERS, KUSTER'S OSCILLATING VERTICAL SPINDLE SANDER GETS YOUR WORK INTO SHAPE — Industrial quality and utility priced to fit the small to medium shop. Easy to use with exclusive straight shank spindles and separate oscillation and rotation motors. Large non-marring table tilts for total control of work position. Illustrated brochure and catalog. KUSTER WOODWORKERS, INC. 50¢. *Circle No. 1081.*

FREE LITERATURE — New brochure showing all *moisture meters* and accessories for moisture meters such as interchangeable electrodes and probes and cables for in-kiln moisture monitoring. Complete line of moisture meters include: Pocket-size Mini-Ligno with LED readout 6%-20%, Mini Ligno E 6%-36%, analog or digital display meters 4%-30%, 60% and a digital moisture meter with built-in compensation for different wood temperatures. LIGNOMAT USA, LTD. Free. *Circle No. 1130.*

PRODUCTION QUALITY CARBIDE TIPPED ROUTER BITS — MLCS Ltd. offers a full line of professional production quality carbide tipped router bits at 50-70% lower than retail prices. We sell through the mail and only direct to craftsmen. Send today for information. MLCS LTD. Free. *Circle No. 1210.*

MASTERPIECE MACHINES — The world's finest woodworking machines are imported by Mahogany Masterpieces: Ulmia table saws, Hofmann planer/jointers, Killinger lathes, Hema bandsaws, and Graule radial saws. Send for a complete portfolio of Europe's finest woodworking machinery. Our machines are built like a Mercedes Benz, German battleship-strong. MAHOGANY MASTERPIECES. $6.00. *Circle No. 1213.*

MASTERPIECE TOOLS — The world's finest woodworking tools, and the world's largest selection of Japanese hand tools are available. Send for the award winning photo catalog of Masterpiece Tools. MAHOGANY MASTERPIECES. $5.00. *Circle No. 1214.*

WOODWORKING PLANS — Catalog of full-size plans printed on heavy paper for toys, gifts, novelties, action windmills, shelves, birdhouses, garden furniture, Dutch windmill, lawn ornaments, old-fashioned lawn swing, jigsaw projects for children, and more. MASTERCRAFT PLANS WEST. $1.00. *Circle No. 1216.*

WOODWORKING BOOKS AT DISCOUNT PRICES — Most complete listing of books for woodworkers. Each book is discounted from 10 to 25% off the cover price. There is absolutely no shipping and handling charge. Woodworking, carving, turning, project books by authors such as Krenov, Frid, Spielman, Nish, Tangerman, and Hoadley are listed along with many hard-to-find titles. MANNY'S WOODWORKER'S PLACE. $2.00. *Circle No. 1217.*

PERFECT EDGE-JOINING EVERYTIME — "Duo-Clamp" holds your boards flat while applying uniform yet firm pressure to squeeze out excess glue. Bowing totally impossible. The need for a surface planer is eliminated; a light belt sander finishes your job. Patent applied for. Easily assembled and unconditionally guaranteed. Made of sturdy maple. Send for information. MARK PRODUCTS. 25¢. *Circle No. 1218.*

WOODWORKER'S SPECIALTIES — 48-page catalog of plans and hard-to-find hardware for the woodworker. Brass hardware, screws, cork products, wood turnings, canister liners, clock movements, picture frame supplies, lamp parts, and more. MEISEL HARDWARE SPECIALTIES. $1.00. *Circle No. 1220.*

TIPS ON WOOD FINISHING — A comprehensive, 30-page booklet includes numerous tips that save time and trouble for do-it-yourselfers. Information ranges from small repairs to restoring the finish of a priceless antique. Also included is a chart showing the full range of colors available. The name of your nearest dealer is provided. MINWAX CO., INC. Free. *Circle No. 1240.*

GERMAN STEEL TOOL CATALOG — 24 pages packed with finest quality tools manufactured in Germany. Included are thousands of unusual and hard-to-find chisels, gouges, parting tools, etc. — all hardened and tempered to hold a keen edge and give a lifetime of dependable service. FRANK MITTERMEIER, INC. Free. *Circle No. 1250.*

WOODEN SHIP MODELS — Discover the world's hobby — building fine-quality, historic wooden ship models. Described are true-to-life scale replicas, lifelike in every detail. A 64-page color catalog introduces you to this fascinating hobby. MODEL EXPO, INC. $1.00 (Refunded with first order). *Circle No. 1256.*

WOODWORKING SUPPLIES CATALOG — Send for new 36-page color catalog of hundreds of foreign and domestic veneers, wood craft patterns, turning squares, carving blocks, toymaking supplies, hardwood lumber (at factory-to-you prices), chair cane, books, spindles, dowels, shaker and mug pegs, candle cups, fancy inlay borders, made-to-order 1-ply and 2-ply veneers and plywoods (every specie including all burls and crotches). Also included is a colorful wood selector chart, simplified veneering instructions and introductory incentive offers and free gift offers. BOB MORGAN WOODWORKING SUPPLIES. $1.00. *Circle No. 1257.*

WOOD CARVING — You can obtain information on learning woodcarving by sending for our literature. The offer includes sample copy of *The Mallet Magazine* and two lesson sheets on carving. NATIONAL CARVERS MUSEUM. $1.00. *Circle No. 1300.*

KILN DRIED CABINET GRADE HARDWOOD — in 18 different varieties. Thickness ⅝ — 16/4. Draw stock, carving wood, turning squares, and material for paneling, flooring, and wainscotting. We ship small amounts UPS, medium loads motor freight, large loads via trailer. Comprehensive listing. NATIVE AMERICAN HARDWOODS. $1.00. *Circle No. 1305.*

WOODWORKING TOOL CATALOGS — R.A. Ness & Co., the Woodworkers Emporium, offers a 2-year subscription, a total of eight huge sale catalogs. Thousands of industrial quality items — machinery, hand tools, portable electric tools, and supplies — are featured at super sale prices. The fee is refundable with purchase. R. A. NESS & CO., the Woodworkers Emporium. $4.00. *Circle No. 1310.*

BANDSAW OWNERS — A new tool is now available so you can make or repair any length bandsaw blade in minutes. Our splicer enables craftsmen to make up any length blade from economical coil blade stock quickly and easily. Three models are currently available to accomodate blade widths from ⅛ to 1½ in. The tool comes complete with detailed instructions and supplies. We also carry OLSON bandsaw stock at reasonable prices. Send for literature. NEW MILFORD SPECIALTIES CO. 50¢. *Circle No. 1315.*

CLOCK COMPONENTS — We feature battery, pendulum, and chime quartz movements of all types: Urgos, Hermle, Grandmother, Grandfather cable drive and chain drive, keywind movements of all types. 400-day clocks, music box movements, flat and benzel type dials — plus a vast assortment of weather instruments. Hundreds of clock items. Very competitive. 75-page catalog. NEWPORT ENTERPRISES. Free. *Circle No. 1320.*

WOOD WORKERS—CARVERS SUPPLIES — Catalog on hard to find items. E-Z pneumatic drum sander, Foredom tools and accessories, Detail Master woodburning unit, abrasive cartridge rolls, books, patterns, much more. NORTH WEST CARVING SUPPLIES. $2.00. (Refundable). *Circle No. 1360.*

PERSONAL BRANDING IRONS — Brochure describes branding irons that enable you to put your name on you work quickly and easily. Made especially for branding wood, they are available with 1, 2, or 3 lines of copy or with your logo. Changeable date also available. NOVA TOOL CO. $1.00. *Circle No. 1380.*

LUMBER DRYING — Nyle Corp., the largest manufacturer in the United States of dehumidification Dry Kiln Systems, offers *Introduction to Dehumidification Lumber Drying.* NYLE CORP. Free. *Circle No. 1390.*

PIN ROUTER AND ROUTER BIT CATALOG — Brochure showing the inverted pin router, the most versatile, easy-to-operate pin router in the world. Designed for operator safety and comfort. Included is a 22-page router bit catalog of all industrial grade bits in both highspeed steel and carbide. C.R. ONSRUD, INC. $1.00. *Circle No. 1440.*

BOSCH ROUTER BITS AND DELTA SHAPER CUTTERS — Send for our sale prices on Bosch router bits and jigsaw blades. Also ask for prices on Delta shaper cutters. Best prices available. PME WOODWORKING SUPPLIES. $1.00. *Circle No. 1470.*

CLEANERS, BANDSAWS, PLANER/JOINER COMBINATION — are described in Park's Woodworking Machinery's free literature. Information includes dimensions, construction specifications, performance ratings and warranty details. Several pieces of information are available including general line literature as well as individual machine spec sheets. PARKS WOODWORKING MACHINE CO. Free. *Circle No. 1475.*

64-PAGE PROBLEM SOLVER CATALOG — Over 700 woodworking items. Authentically reproduced furniture pulls, knobs, locks, casters, table slides, hinges, supports, latches, catches, bed hardware, veneer, chair cane, books, and much more. Satisfaction guaranteed. PAXTON HARDWARE LTD. $3.50. *Circle No. 1480.*

DRUM SURFACE/THICKNESS SANDER — Now a radial arm saw accessory providing inexpensive, space saving surface/thickness sanding capability. Product features include: instant attachments to all radial saws, 44 in. sanding whip, sanding drum with sandpaper fasteners, and vacuum dust collection. Send for information. PERFORMAX PRODUCTS. $1.00. *Circle No. 1485.*

PEG — Turns green wood into beautiful projects as seen on page 46 of February 1986 issue of Wood. Supplies and catalogs of other items for the home woodworker. Price of catalog refundable with first order. PITSCO. $4.00. *Circle No. 1490.*

OUR FOUR COLOR CATALOG — features a large selection of movements, hands, dials, bezels, numerals, weather instruments, prints as well as a full-line of clock making supplies. Thousands of ultra-thin pendulum and chime movements in stock at all times. Most orders shipped within 48 hours. PRECISION MOVEMENTS. $1.00. *Circle No. 1555.*

THE REVOLUTIONARY PARALOK TABLE SAW FENCE — makes cutting at least seven times more accurate and much faster. Single-handed operation works on the same principle as a drafting table, fence is always parallel to blade. Adjustable at intervals of 1/64 in. Send for more information. QUINTEC MARKETING. $1.00. *Circle No. 1585.*

AMERICAN-MADE WOODWORKING EQUIPMENT — The RBI Hawk line of precision scroll saws in models from 12 to 26 inches. Unique patent pending cam tensioning system allows quick resetting of blades when doing inside cuts. RBI line of woodplaners, models 408 and 612; over 50 years experience in building wood thickness planers coupled with patented quick change cutterhead, to allow fast and easy changeover to molder or sander, make the RBI the best value on the market today. 30-day In-Shop Guarantee of Satisfaction. RB INDUSTRIES, INC. Free. *Circle No. 1600.*

A CATALOG OF DEFECT-FREE HARDWOODS — Reproduction Hardwoods provides you Red Oak, Mahogany, Cherry, Walnut, Hard Maple and Poplar in solid panels and turning squares. Plus hardwood faced plywood and butcher block stock. All defect free! Widths up to 30 in. and lengths up to 60 in., squares up to 5 in. thick. Custom sized for no waste building. Shipped UPS to your door. REPRODUCTION HARDWOODS. $1.00. *Circle No. 1630.*

RODMAN HAS TRUE GRIP CLAMPS — These unique clamps are a basic woodworking necessity. CLAMP 'N TOOL GUIDE is the first bar clamp that my be used as a straight edge. The BACK TO BACK BENCH CLAMP features low profile clamping jaws and a super wide capacity. TRUE GRIP is a new clamping system invented and manufactured in the U.S.A. Send for catalog sheet. RODMAN TOOLS. Free. *Circle No. 1655.*

PROFESSIONAL SANDING EQUIPMENT — Sand-Rite's Brush Head sands mouldings and intricate carvings without losing detail or shape of the part. Pneumatic drum gives quick and excellent results on contoured shaped parts. Everything we sell is industrial quality. Send for brochure. SAND-RITE. Free. *Circle No. 1665.*

TOOLS ON SALE — A division of Seven Corners Ace Hardware Inc. offers a comprehensive catalog featuring over 190 pages of the most competitive prices in the industry. If you're looking for savings and fast delivery on over 1,800 items, request our catalog. This catalog offers one of the most complete selections of power tools available anywhere from the most respected manufacturers in the industry: Milwaukee, Makita, Porter-Cable, Black & Decker, Freud, Bosch, Delta, and many more. SEVEN CORNERS ACE HARDWARE INC. Free. *Circle No. 1670.*

LETTER LAYOUT GUIDES — Brochure containing complete information about a new product of special interest to scroll sawers, carvers, and wood sign makers. A lettering guide to layout large letters and numbers to be cut in wood or other materials. Made from a durable plastic material for years of use. Price of brochure is refundable with first order. SEYCO SALES CO. $3.00. *Circle No. 1710.*

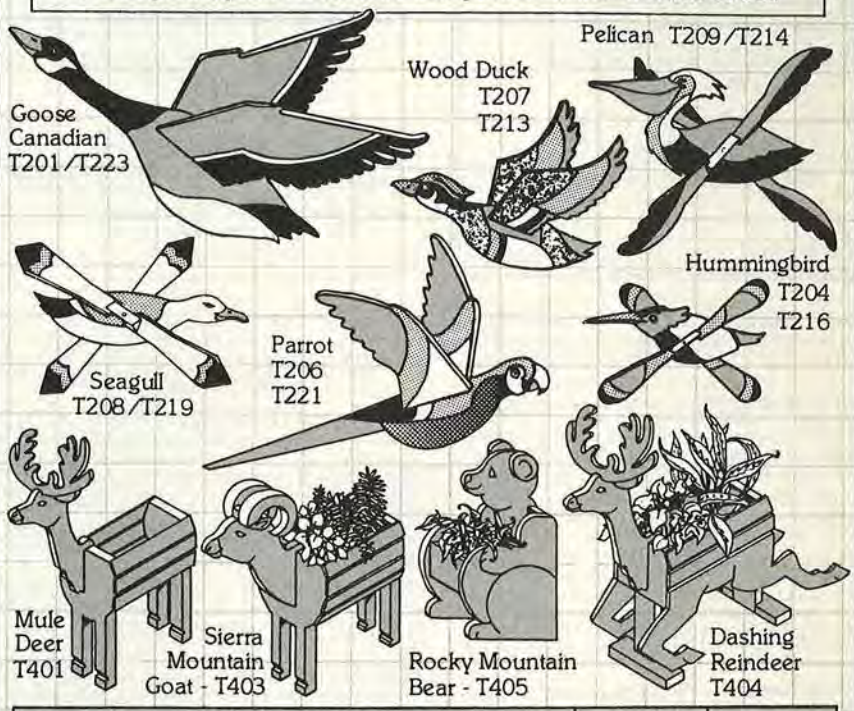
SHAKER FURNITURE KITS & DECORATIVE ACCESSORIES — Authentic reproductions — rocking chairs, side

Whirligigs Wind Mobiles Planter Pets!™

Full Size Woodworking Patterns by Timber Technics™

These woodworking patterns are ready to trace and easy to build with detailed assembly views and instructions. Give your project that extra "character" found in each Timber Technics™ pattern. The **Whirligigs** and **Wind Mobils** are printed in **two** convenient sizes on each pattern while the **Planter Pets**™ show **three** sizes on each pattern. All patterns are printed full size on two or more 22"x32" pages.

The **Whirligig** has a propeller "wing or leg" which turns in the wind. The **Wind Mobil** is balanced from the wings with fishline and will gently "fly" in a breeze, near an open window, or from a gentle pull on the string. The **Planter Pets**™ are a wonderful way to show off your favorite flowers, vegetables, ferns and other potted plants. And, these little pets are at home inside or out!



Circle items of your choice:		Price/Ea.	Total
Whirligigs: T201, T204, T206, T207, T208, T209		$2.98 ea.	
Wind Mobils: T213, T214, T216, T221, T219, T223		$2.98 ea.	
Planter Pets: T401, T403, T404, T405,		$3.49 ea.	
Timbers Catalog with hundreds of Woodworking Patterns & Supplies is included FREE with any order, $1 alone.	Sub-Total		
	Calif. Residents add 6% Sales Tax		
	$2 Processing Fee Per Order		$2.00
	Total enclosed US funds (Canadians add 30%)		

For VISA and Mastercard orders call 24 hr. 916/581-4141

NAME:
ADDRESS:
CITY:
STATE: Zip
Phone: ( )

Timbers/Lake Tahoe, Inc.
2911 Lake Forest Rd.
Dept. T9
Carnelian Bay, CA
95711-0850

The RBI Woodplaner™ Features Planing, Molding and Surface Sanding.

With One Big Capacity, Precision Tool.

Planing, molding and sanding . . . the three secrets to really successful woodworking. Without an affordable planer, you're stuck with mill-size boards for all your projects. Without an affordable molding machine, your projects will be basic straight lines with little creativity. Without a precision surface sanding tool, your finish will never have furniture-factory quality.

Woodplaner™ 612 Model

So what's the answer? Before you even think of purchasing a planer, you owe it to yourself to get all the "plain" facts about RBI's Precision Woodplaner™. It's three tools in one compact, affordable unit.

Send today for free information kit!

rbi 1801 Vine Street
Harrisonville, MO 64701

☐ **YES.** Tell me about your 30-day "In-The-Shop Guarantee of Satisfaction."

Name_____

Street_____

City _____

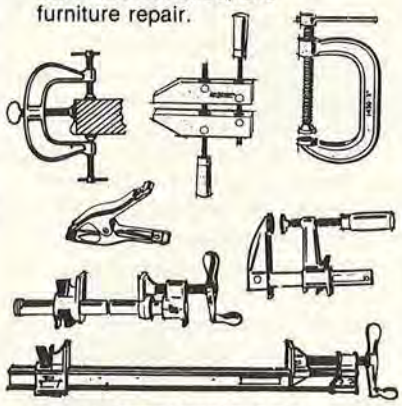
State_____ Zip_____

© 1986 **RBI,** Inc. W-10

"Jorgensen"® AND "Pony"®

CLAMPS

Dependable extra hands for all types of clamping and work-holding jobs: woodworking projects, home maintenance, and furniture repair.



Write for FREE LITERATURE. For big 32-page "how-to-clamp-it" catalog, send $1.00.

ASK YOUR DEALER

ADJUSTABLE CLAMP COMPANY
THE CLAMP FOLKS
410 N. Ashland Ave./Chicago, IL 60622

A forest fire is no picnic.

A Public Service of This Magazine & The Advertising Council

chairs, trestle tables, candle stands, kegs and pegboards, rag rugs, oval boxes, spirit drawings, and needlework kits. 32-page catalog. SHAKER WORKSHOPS. $1.00. *Circle No. 1715.*

WOODCRAFTERS — Plans, kits, hardware, hardware parts. Supplies for woodburning, folk art painting, stencilling, carving, toymaking, and much more. Top quality products at very reasonable prices. SKILCRAFT. $1.00 (Refundable with order). *Circle No. 1733.*

LAMINATED SOUTHERN PINE TABLE TOP — Make your own woodworker's bench. Send for information. SOUTHERN PINE. Free. *Circle No. 1740.*

PORTABLE SAWMILL SYSTEM — You can harvest your own wood with the Sperber Sawmill. No need for heavy equipment. Cut lumber to size where it falls. Many of our customers have paid-off their mill with one weekend's cutting — or less. Send today for brochure package and start milling your own wood. SPERBER TOOL WORKS. $1.00. *Circle No. 1743.*

SYSTEMS IN JOINERY — New 25-page illustrated catalog featuring many uses of the joint-matic and introduction of other high quality machines, fixtures, and cutting tools that make many of the more difficult tasks in woodworking easier. STRONG TOOL DESIGN. $2.00. *Circle No. 1745.*

BACKYARD STRUCTURES — Contains designs for 21 really different storage sheds, 5 cabanas, 13 animal shelters, 3 barns, 13 garbage enclosures, 3 studios, and more, plus 8 plans in book. 66 designs in all, for which plans can be ordered. Full color. SUN DESIGNS. $8.95. *Circle No. 1754.*

CABINET MAKERS' TOOLS AND SUPPLIES — New 224-page catalog of fine hand and power tools for cabinet makers or serious woodworkers. Also featured are three sections on hardware, supplies, and cutting tools. This catalog takes the mystery out of using European hardware. A must reference for the woodworker. THE SOURCE. $3.00. *Circle No. 1810.*

TIMBERS COUNTRY STORE — Catalog features hundreds of woodworking supplies, toy patterns, furniture patterns, tool use and instruction books, woodworking pattern books, hardwood toy and furniture parts plus many hard to find tools and shop supplies. TIMBERS COUNTRY STORE. Free. *Circle No. 1820.*

ATTENTION WOODWORKERS — Learn how you can afford a quality 24 in. scroll saw that you build from a kit. Also ask how, with the WHEEL-RIGHT, you can mass- produce wooden wheels by using your drill press. THE TOOL COMPANY. $1.00. *Circle No. 1840.*

TOYMAKERS SUPPLIES — Catalog of over 100 full-size wooden toy patterns — classic to contemporary designs from Packard Le Baron to Streamlined train and moon machine. Easy to follow, fully illustrated patterns which appeal to all ages. Hardwood wheels, shaker pegs, axles, etc., in stock. Accessory kits of pattern and turnings available. TOY DESIGNS. $1.50. *Circle No. 1860.*

CLASSIC CARS AND TRUCKS — Flyer of seven full-size wooden toy patterns of early 1900's motor vehicles — 1912 White Gas Truck, 1929 Chrysler Imperial, 1924 Dodge Delivery Van, 1931 Packard Le Baron, 1915 Peirce Arrow, 1926 Gramham Brothers Truck, and 1929 Chevy Truck. Easy to follow instructions, pictorial assembly views and complete stock list. Two inch spoked wheels available to compliment these designs. TOY DESIGNS. 40¢. *Circle No. 1861.*

TOYMAKER'S SUPPLY COMPANY — has your best bulk price on quality wooden toy parts and toy plans. Over 50 turnings to make your toys professional looking. Send for catalog. TOYMAKER'S SUPPLY CO. Free. *Circle No. 1863.*

WOOD TOY PATTERNS — Patterns for all ages including childrens' patterns and executive toys. New catalog has many new patterns to choose from including parts and wheels. Send for new catalog and receive a coupon for free wheels and axle pegs. TOYS AND JOYS. $1.00. *Circle No. 1865.*

CLOCK BUILDERS — New 1986-87 catalog with everything you will need for building that family heirloom. Products include: 40 clock plans, mechanical and quartz clock movements from nine tube Grandfather to four melody quartz battery movements, dials, hardware, and all component parts related to clock building. Quantity prices available. Price of catalog refunded with first $25.00 order. TURNCRAFT CLOCK CO. $3.00. *Circle No. 1880.*

CLAMPS FOR ALL YOUR WOODWORKING NEEDS — Information and prices on our new line of lightweight clamps especially designed for the small shop where work and storage areas are limited. Many replace those long, heavy lengths of pipe we've all wrestled for so long. Also have attachments for the Shopsmith Mark V and Multi Tool Imports. Prices include UPS delivery with shipment often the same day. UNIVERSAL CLAMP CO. Free. *Circle No. 1930.*

IF YOU ARE INTERESTED IN RESTORING ANTIQUES — this 112-page catalog packed with unusual, hard-to-find items is just for you. Included are hundreds of essential items for antique restoration including top quality brass reproduction hardware, oil lamps and accessories, numerous wood component repair parts and kits, caning and basketry supplies, everything needed for wood refinishing, related tools, books, and a complete line of upholstery equipment and supplies. All at wholesale prices. Send for this informative catalog. VAN DYKE' SUPPLY CO. $1.00. *Circle No. 1970.*

SOLID WOOD CLOCK KITS — Full-color catalog of beautiful, easy-to-make clocks. Grandfather, mantel, and wall clocks. All solid wood with solid brass pre-assembled movements. All parts hand-cut for perfect assembly even by beginners. VIKING CLOCK CO. 50¢. *Circle No. 1980.*

WOODCARVING TOOLS — Whittlers and carvers — Warren Tool Co. offers a catalog for you full of whittling and carving hand/power tools, books, stones, wood, and supplies. Since 1927, the finest in woodcarvers tools. WARREN TOOL CO., INC. 60¢. *Circle No. 2020.*

BEAUTIFUL WOOD FINISHING — with Watco Danish Oil Wood Finish. Full-color *How to Beautifully Finish Wood* booklet enables anyone to create professional finishes the first time with all types of wood. One application of Watco Wood Finish seals, primes, finishes, hardens, protects, beautifies, penetrates deeply into the wood; outlasts surface coats three to one. Eight attractive Danish Oil colors now available. Eliminates pre-staining. WATCO-DENNIS CORP. Free. *Circle No. 2025.*

FREE GIFTS FOR WOODWORKERS — New *National Directory of Valuable Free Gifts and Things For Do-It-Yourselfers!* How and where to write for hundreds of free gifts, catalogs, samples, "how-to" instructions, manuals, courses, handbooks, magazines, books, plans, and hundreds of other free items for woodworkers. Money-back guarantee. WEISS & DAUGHTERS. $1.99. *Circle No. 2030.*

FREE DISCOUNTS AND SAVINGS FOR WOODWORKERS — New *National Directory of Hundreds of Wholesalers, Discount Houses, and Manufacturers of Woodworking Supplies and Equipment.* Save big money on all your supplies and equipment by buying direct at the lowest rock-bottom prices in America. Save hundreds of dollars a year. How and where to write for hundreds of free price lists, catalogs, sales bulletins, closeout bulletins, and confidential manufacturers, distributors and wholesalers catalogs. Covers all 50 states and includes a free national mail order directory. Money back guarantee. WEISS & DAUGHTERS. $1.99. *Circle No. 2033.*

FREE HOME INCOME AND BUSINESS FOR WOODWORKERS — New book *Hundreds of Successful Ways Woodworkers Make Money At Home, Spare Time, Without Investment.* Hundreds of proven success stories on how woodworkers make big money at home in spare time without investment. Shows how easy it is to make money quickly and easily. No experience necessary. Easy-to-follow ideas, tips, methods. Money-back guarantee. WEISS & DAUGHTERS. $1.99. *Circle No. 2034.*

FREE: HOW TO SAVE TIME AND MATERIAL — Work with confidence and control. SHOPHELPER Safety Guides provide stability, to help eliminate binding, chatter, and kickback. With an extra pair of hands from SHOPHELPER you can hold work firmly on table and radial saws, shapers,

band saws, and others. Complete information from WESTERN COMMERCIAL PRODUCTS. Free. *Circle No. 2040.*

WOOD FINISHING SUPPLIES — A 35-page catalog of everything needed for finishing wood. From strippers, abrasives, stains, shellacs, varnish, lacquer, oil finishes, solvents, thinners, rubbing mediums, books, brushes, touch-up items, respirators, tack rags, to gold leaf and gilding supplies. The first 8 pages of this catalog are devoted to helpful information on how to use these materials. WOOD FINISHING SUPPLY CO., INC. $2.50. *Circle No. 2062.*

WOODWORKERS CATALOG — More than a catalog — it's one of the best sources for quality woodworking tools. You'll find everything from bit braces to wood borers, from saws to sharpening stones. Every product is sold satisfaction guaranteed. WOODCRAFT SUPPLY CORP. Free *Circle No. 2070.*

THE JAPAN WOODWORKER'S 1986 CATALOG — is loaded with the best tools you can get your hands on. In our catalog you will find a complete selection of Japanese tools for the woodcarver, carpenter, and cabinet maker. Send for catalog plus supplements for next two years. WOODLINE-THE JAPAN WOODWORKER. $1.50. *Circle No. 2075.*

DESIGN & DECORATE WITH WOOD MOULDINGS — Contains full-color photos of various household rooms showing extensive use of wood mouldings. Profile drawings of all mouldings used to create these finished designs are shown, plus suggested alternative profiles. Mouldings are a simple way to transform an ordinary room into a showplace on a minimum budget. Full-color 8 pages; 8½x11 in. WOOD MOULDING AND MILLWORK. 75¢. *Circle No. 2091.*

"HOW TO WORK WITH WOOD MOULDINGS" — For the individual who wants to learn the proper way to install wood mouldings. This brochure goes step-by-step through the preparation and installation of wood mouldings. A description is given of the basic profiles available, possible applications, and how to calculate the amount of moulding needed for a specific job. WOOD MOULDING & MILLWORK. 40¢. *Circle No. 2092.*

"HOW TO WORK WITH LATTICE" — This 32-page book shows many traditional and untraditional uses for lattice wood moulding and alternative profiles. The many uses illustrated are for both interior and exterior application. Find such projects as accent walls, decks, fences, furniture trim, lighting fixtures, mail boxes, picture frames, room dividers, and many, many more. WOOD MOULDING AND MILLWORK. 75¢. *Circle No. 2093.*

"HOW TO FINISH WOOD MOULDINGS" — This brochure instructs the individual interested in applying a professional-looking finish to wood mouldings. The brochure explains the differences between paints, stains, clear finishes, and miscellaneous finishing products. Illustrations show how to finish new wood. Tools necessary to do a professional-looking job are also covered. WOOD MOULDING AND MILLWORK. 40¢. *Circle No. 2094.*

WOODWORKERS SUPPLY — Offers high quality tools and supplies for skilled, amateur, and professional woodworkers. Our complete catalog includes machinery, hand tools, plans, router bits, shaper cutters, wood specialities, and more. For your two year subscription send to WOODWORKERS SUPPLY OF NEW MEXICO. $2.00. *Circle No. 2125.*

WOODWORKING ASSOCIATION OF NORTH AMERICA — First international association for woodworkers. Benefits include our quarterly magazine *International Woodworking*, specials from selected manufacturers, group health and life insurance, access to the woodworking network. WOODWORKING ASSOC. OF NORTH AMERICA. 50¢. *Circle No. 2127.*

QUALITY AMERICAN-MADE WOOD TURNINGS — such as shaker pegs, spindles, toy wheels, toy parts, craft items, and dowel rods in birch, oak, walnut, and cherry. Send for complete 32-page catalog. WOODWORKS. $1.00. *Circle No. 2130.*

WOODWORKING MACHINERY CATALOG — Workbench Tool Co. is now offering the Powermatic 26 spindle shaper, 3 hp., 1 ph., ½ to ¾ in. spindles, reversing switch for only $1625 FOB. Send for catalog. WORKBENCH TOOL CO. $2.00. *Circle No. 2145.*

PROJECT PLANS FOR WOODWORKERS — Professionally designed projects include furniture, playthings, and accessories, to more complex projects such as storage sheds and gazebos. These plans are designed using readily available materials, keeping in mind standard sizes of lumber. Instructions are clear and concise, and occasionally include tips that will make your job easier. Some plans have a cut-out materials list to take with you to the lumber yard. All plans are current, and we are constantly adding to our line. Order our catalog now and get started! THE WORKSHOP BLUEPRINT CO. $2.00. *Circle No. 2150.*

EXOTIC HARDWOODS — Wyndham Woods offers the finest exotic hardwoods, precision cut and dried to our specifications at a modern European mill. As a direct importer we can offer substantial savings on such fine woods as padouk, mahogany, shedua, doussie, zebrawood, and many others, as well as domestic species and veneers. For the best wood at the best prices, send for our catalog. WYNDHAM WOODS, INC. $1.00 (Refundable with order). *Circle No. 2160.*

IS THIS THE WORLD'S BEST JOINER-PLANER? — We think so and invite you to take a closer look! MiniMax's new FS-35 joiner-planer combines industrial quality with an affordable price that will appeal to professionals and amateurs alike. THE XYLOPHILES CO. $1.00. *Circle No. 2170.*

DOOR SHOP™ MANUAL AND CATALOG — The 37-page Door Shop™ manual is clearly written and beautifully illustrated with over 156 detailed drawings covering the complete process of door building. Each section covers proper methods and exact set-ups for the router, including how to recognize and correct for errors. There are sections covering design, lumber selection, measuring, panel raising, rail and stile fitting, guides, clamping, gluing, and finishing. This is the most comprehensive manual out today. When you purchase the Door Shop™ manual for $5.00 you also recieve Zac's 26-page router bit and shaper cutter catalog free. And as an extra bonus you receive a hardwood door corner sample with your catalog order. $5.00 rebated with purchase. ZAC PRODUCTS INC. $5.00. *Circle No. 2195.*

MAKING WHIRLIGIGS AND OTHER WIND TOYS, S. Pierce — Practical! Find out how to get the wind to hit them right, balance the paddles. Make 3 different kinds of whirligig arms, 22 patterns: soldier, mermaid, penguin, Santa, unicorn, and more plus wind toys — windmills, racing jockeys, and even a tireless fellow milking an endlessly patient cow. 4 pages in color, 132 pages 7½x9½. STERLING PUBLISHING CO. $8.95. *Circle No. 2250.*

OUTDOOR PLAYHOUSES AND TOYS — Projects and Plans, Staff of *Workbench* magazine. **From the pages of** *Workbench*! Instructions for making classic toys, child-safe, many never in a book before. Every project has finished photo. Extensive over-sized plans for entire playground set, kiddie cars, sleighs, scooters, wagons, doll houses, cradles, 53 more. 112 pages, 8½x11, many photos and diagrams. STERLING PUBLISHING CO. $7.95. *Circle No. 2251.*

MAKING WOOD BANKS, Harvey E. Helm — 38 different coin banks, some even have cleverly hidden closure plugs. Easy-to-follow patterns include a whale, penguin, owl, camera, doll, football helmet, plus many others. 128 pages, 6½x8¼. STERLING PUBLISHING CO. $6.95. *Circle No. 2252.*

TABLE SAW TECHNIQUES, R. Cliffe — Essential bench reference. Every model blade accessory techniques plus maintenance, sharpening, etc. Learn basic advanced cuts, mitering, joinery problem solving, special set-ups. Projects: picture frames, nightstands, clocks, trunks, chests, and much more. 352 pages, 8x10, over 700 photos and detailed line drawings. STERLING PUBLISHING CO. $14.95. *Circle No. 2253.*

MAKING ROCKING HOURSES, A. Dew — Illustrated step-by-step directions, scale plans, cutting lists for simple hobby horses through true rocking horses include basic joinery, turning, carving leather and metal work (for saddle bits), painting, finishing, restoration. 128 pages, 5¾x9¾, 100 photos, 50 illustrations. STERLING PUBLISHING CO. $9.95. *Circle No. 2254.*

BLIZZARD'S WONDERFUL WOODEN TOYS, Richard Blizzard — From a 1907 Rolls Royce that's 3 feet long to a truck with a working fork lift — there are full-color photos, step-by-step instructions and detailed cutting lists, for the more than 30 projects, 134 pages of extravagantly detailed plans. 48 photos (9 in color), diagrams, 224 pages, 8¼x11¾. STERLING PUBLISHING CO. $9.95. *Circle No. 2255.*

MAKING FOLK TOYS AND WEATHER VANES, S. Pierce — Classic running horse weather vane, miniature rocking horse, and many others. Simple wood projects and patterns that have a real Colonial look. Explicit instructions for pattern making, cutting, drilling, sanding, staining, assembly, painting, more. 112 pages, 7½x9½, 20 photos, patterns. STERLING PUBLISHING CO. $7.95. *Circle No. 2256.*

WOOD FINISHER'S HANDBOOK, S. Allen — State-of-the art! 150 photos and drawings show how to prepare new wood by hand and machine, repair imperfections, revive old finishes, stripping using stains, plus the new two-part finishes. Includes new products, treating difficult woods, wood graining, stenciling, and more. 192 pages, 8x10. STERLING PUBLISHING CO. $9.95.

MAKING WOOD SINGS, Patrick Spielman — Heavily illustrated. Covers basic handcarved signs, cutout or sawn letters, routed signs. Included are tips, shortcuts, and advice on subjects of design, material selection, tools, machines, finishing, project ideas. 144 pages, 6½x8¼. STERLING PUBLISHING CO. $7.95. *Circle No. 2258.*

ROUTER HANDBOOK, P. Spielman — Author of Making Wood Signs. The definitive book on the router, which has done more to revolutionize the craft of woodworking than any other tool. Including step-by-step techniques for every operation, information on accessories and gadgets to expand the router's usefulness, patterns and instructions for dozens of handsome projects. 600 photos and illustrations, 224 pages, 8x10. STERLING PUBLISHING CO. $9.95. *Circle No. 2259.*

Information

WORTH WRITING FOR

Better Homes and Gardens®
WOOD MAGAZINE,October, 1986
Dept. SOW06
P.O. BOX 2051
CLINTON, IA 52732

TO ENSURE PROMPT HANDLING OF YOUR ORDER FOLLOW THESE INSTRUCTIONS:

- **Circle your choice**
- **Enclose cash, check, money order for cost of booklets plus $2.00 service charge (no stamps/foreign)**
- **Send coupon and remittance to address above**
- **ALLOW 4-6 WEEKS FOR DELIVERY**
- **Coupon expires October 19, 1987**

WOOD SUBSCRIPTION

1. A 1 year WOOD subscription (6 issues) for $15.00 — a $6.00 savings off newstand rate. Allow 6-8 weeks for first issue. Add $6.00 outside U.S. Be sure to include payment with total below.

FREE LITERATURE

Circle numbers below corresponding to items in this issue.
Please include $2.00 for handling charge

262.	550.	781.	1320.	1665.	2025.	
273.	551.	1130.	1390.	1670.	2070.	
317.	552.	1210.	1475.	1740.	1930.	
402.	587.	1240.	1600.	1820.	2040.	
495.	705.	1250.	1655.	1863.		

PRICED LITERATURE

Numbers below refer to items on which there is a charge.
Please include proper remittance.

2....$1.00	245....$1.00	450.....50¢	780....$1.00	1380....$1.00	1880....$3.00	2195....$5.00
3....$1.00	250....$1.00	530.....25¢	800....$1.50	1440....$1.00	1970....$1.00	2250....$8.95
12....$2.00	258....$1.00	560....$1.00	1020....$1.25	1470....$1.00	1980.....50¢	2251....$7.95
45....$1.00	259....$1.00	570....$1.00	1023.....25¢	1480....$3.50	2020.....60¢	2252....$6.95
50....$2.00	270....$1.00	575.....35¢	1070....$2.00	1485....$1.00	2030....$1.99	2253..$14.95
60....$1.00	272....$3.00	585....$2.00	1080.....50¢	1490....$4.00	2033....$1.99	2254....$9.95
65....$1.00	275....$1.00	600....$3.00	1081.....50¢	1555....$1.00	2034....$1.99	2255....$9.95
66.....50¢	285....$3.00	630.....25¢	1213....$6.00	1585....$1.00	2062....$2.50	2256....$7.95
85.....50¢	300....$1.00	631.....25¢	1214....$5.00	1630....$1.00	2075....$1.50	2257....$9.95
100....$1.00	303....$1.00	650....$1.00	1216....$1.00	1710....$3.00	2091.....75¢	2258....$7.95
110....$2.00	304....$3.00	670....$3.00	1217....$2.00	1715....$1.00	2092.....40¢	2259....$9.95
115....$2.00	308....$2.00	671....$3.00	1218.....25¢	1733....$1.00	2093.....75¢	
130....$2.00	315.....50¢	672....$3.00	1220....$1.00	1743....$1.00	2094.....40¢	
144....$1.00	320....$1.00	710....$1.00	1256....$1.00	1745....$2.00	2125....$2.00	
145....$1.00	345.....25¢	715.....50¢	1257....$1.00	1754....$8.95	2127.....50¢	
146....$2.00	350....$1.00	720....$1.50	1300....$1.00	1810....$3.00	2130....$1.00	
147....$1.00	400....$5.00	750....$2.00	1305....$1.00	1840....$1.00	2145....$2.00	
148.....25¢	420....$2.00	765....$2.00	1310....$4.00	1860....$1.50	2150....$2.00	
150....$4.50	430....$1.00	770....$1.00	1315.....50¢	1861.....40¢	2160....$1.00	
230....$1.00	440....$1.00	771....$1.00	1360....$2.00	1865....$1.00	2170..$$1.00	

Name (please print) _____

Address _____

City _____

State _____ Zip Code _____

I AM ENCLOSING:

$_____ for priced items

$ 2.00 for handling

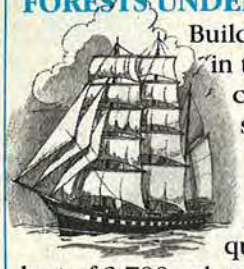
$_____ total remittance

Print this article

The Bulletin Board

FACTS, FACES & FABLES OF INTEREST TO HOME WOODWORKERS

FORESTS UNDER SAIL



Building sailing ships in the mid-18th century consumed incredible quantities of oak. A 74-gun warship required the equivalent of 3,700 oak trees. A 100-gun ship needed an 80-acre forest!

TOP TURNERS LAUNCH NEW ASSOCIATION

If tool collectors, carvers, and exotic wood enthusiasts can have associations, why not woodturners? That's what David Ellsworth, Dale Nish, Bob Stockdale, Del Stubbs, Rude Osolnik, and other top turners asked themselves a year ago when they formed the American Association of Woodturners (AAW).

You don't have to be a professional turner to join. Membership now totals about 1,000 artisans, tool and equipment suppliers, gallery owners, collectors, and hobbyists. Members are united by their fondness for woodturning, desire to learn more about it, and willingness to promote it as an art and craft.

So far, AAW, which operates on a nonprofit basis, has developed a newsletter, a quarterly journal called the *American Woodturner,* and several directories. The guides list sources for wood and tools, galleries featuring turnings, and instructors and demonstrators. With all the talent AAW has on tap, the learning potential should be high.

For more information, write: *American Association of Woodturners, Dept. W, P.O. BOX 982, San Marcos, TX 78667, or phone 512/396-8689 (annual membership is $15).*

FEUDAL FIREWOOD

In feudal England, peasants were allowed to gather only downed wood, or dead wood from standing trees that they could reach with a hook or a crooked shepherd's staff. They got their wood by "hook or crook," and the saying still credits their resourcefulness.

AROUND THE NATION

Heart of Dixie Woodcarving Show, Sept. 19-21. Montgomery Mall, Montgomery, Ala. Third annual show and sale sponsored by P-M Chippers, the area's woodcarving club. Phone 205/272-7503.

Ohio Duck Hunters Decoy Contest, Sept. 28. Magee State Wildlife Area, State Rt. 2, Oak Harbor, Ohio. Exhibition of decorative and functional decoy carvings, sales. Write Robert Lund, 140 Southwood Dr., Perrysburg, OH 43551.

Mid-West Tool Collectors Fall Meeting, Oct. 9-11. Holiday Inn South, Louisville, Ky. From barbed wire stringers to double-claw hammers, old tools will be everywhere. Seminars on specific areas of collecting and use. Members only (join at door for $15). For details, contact Gale Zerkle, 511 Cookston Ave., Springfield, OH 45503.

***Note:** For a listing of woodworking shows usually found in this column, see the article, "Woodworking Tool Shows" on page 96.*

CHEMISTRY, NOT JACK FROST, CREATES FALL COLOR

Two chemical phenomena cause leaves to change color. Carotenes and xanthophylls are yellow pigments that leaves have all summer, but green chlorophyll pigments hide them. Cold destroys the chlorophyll and yellow emerges.

Reds and purples come from pigments called anthocyanins, produced by sugar in the sap. Lower temperatures and short daylight hours cause them to build up in the leaves.

HOMER FORMBY: REFINISHING'S DOWN-HOME ANSWER MAN

"Shucks, you don't have to go to all that work," Homer Formby, 62, sometimes responds to an oft-asked question. "Lots of old furniture simply doesn't need refinishing."

He sounds absolutely convincing, even when you know his business is selling Formby furniture finishing and refinishing products. It might be that, like most of us, Homer really doesn't look forward to refinishing furniture. At least, not unnecessarily.

When it comes to refinishing, Homer Formby aims to tell it like it is.

At age nine, in Florida, Homer worked after school in his father's antique and furniture refinishing shop. By the time he was 40, Homer had his own shops.

To speed up the refinishing process, he set about developing a formula that was not only fast, but easier and safer. In 1969, his new furniture refinisher reached the public.

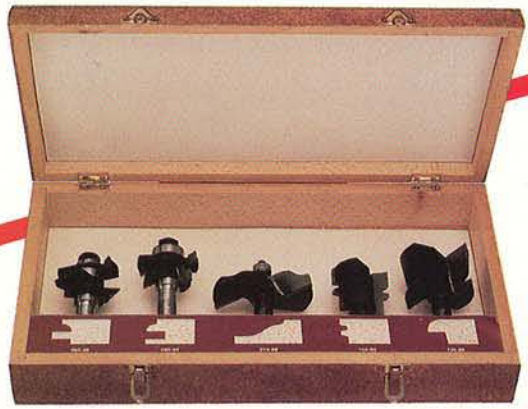
Today, Homer directs the business from Olive Branch, Mississippi. Formby products are promoted in national magazines, on television, and stocked in 30,000 stores.

Homer still advises you not to refinish if you don't have to:

- "Just lift off embedded dirt with a good cleaner, then rub in lemon oil to bring out the luster."
- "Test to see if you need paint remover by dabbing a spot on an unblemished area of finish with a cotton ball moistened with fingernail polish remover. If the ball sticks, use refinisher. If it won't soften, use paint remover."

You can send refinishing questions to Homer at *Dept. W, P.O. Box 667, Olive Branch, MS 38654.*

NEW FROM freud® FOR...



ROUTING

Freud's new 5 piece router bit door system allows you to produce raised panel cabinet doors with your ½" chuck router. Each bit is made with the finest carbide available and sharpened with a 600 grit diamond wheel.

The bit profiles are: rail and stile, raised panel, door lip, glue joint. The bits come in a wooden, box jointed case for ease of storage.

As a set, the 94-100 list for **$248.00** ..... Sale Price **$199.00**

SHAPING

Freud's new 5 piece cabinet set for the ¾" - ½" shaper comes with rail and stile, raised panel, door lip and glue joint cutters. A box jointed, wooden case is included for ease of storage and prevention of damage.

The cutter profiles are: rail and stile, raised panel, door lip, glue joint.

The cutters are made with the highest of manufacturing standards and materials. If purchased individually, they would cost $510.00.

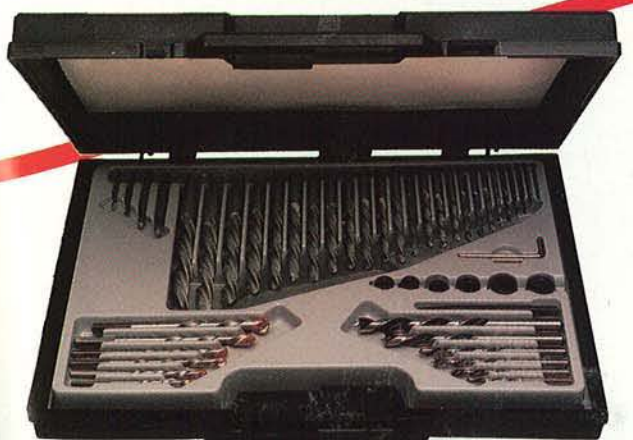
As a set, the EC-900 list for **$449.00** ..... Sale Price **$349.00**

BORING

Freud's new 16 piece Forstner bit set comes in a box jointed, wooden storage case. These bits, guided by their rim, will create a clean flat bottom hole in wood. A special heat treated steel is used in their production to assure long lasting edges.

The 16 bits range in size from ¼" to 2⅛" in ⅛" increments. These bits will fit any stationary or portable drill using a ⅜" or larger chuck.

The FB-100 Forstner bit set list for **$249.00** ..... Sale Price **$199.00**



DRILLING

Freud's new 50 piece drill bit set comes with a heavy duty carrying case for ease of storage and protection. This set consists of: A) 25 high speed steel bits (1/16 - ½ in 1/16 increments) B) 4 high speed steel bits for use in sheet metal (¼, 3/16, ⅛, 3/32) C) 6 chrome vanadium steel brad point bits for use in wood (⅛, 5/32, 3/16, ¼, 5/16, ⅜) D) 6 carbide tipped masonry bits with hex shanks (5/32, 3/16, 7/32, ¼, 5/16, ⅜ E) 1 center punch, 2 Allen keys and 6 depth stops to set bits at pre-determined depths.

These bits will fit any stationary or portable drill using a ⅜" or larger chuck. The DB-050 drill bit set list for **$89.00** ..... Sale Price **$69.00**

For The Name Of Your Local Distributor:
Call Toll Free (outside N.C.) 1-800-334-4107
In North Carolina Call 1-919-434-3171

INTRODUCING PLANE JANE. THE PORTABLE PLANER THAT'S ANYTHING BUT PLAIN.

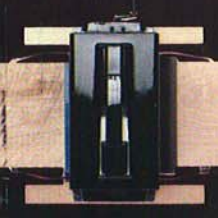
It weighs just 58 lbs. It'll fit in a 2 ft. x 2 ft. space with room to spare. It can almost get lost in a corner of a workshop or even the back of a truck. And therein lies the beauty of Plane Jane.

For serious woodworkers, it's small enough to be practical for any size workshop, yet will plane material up to 10" wide and 5" thick.

It will virtually pay for itself in time and money saved because it reduces hand finishing and buying of expensive finished lumber.

And don't overlook Plane Jane's portability. You can take it to job sites as easily as you could a drill.

It's everything you could ask for in a planer. You'll see at a glance, the real beauty of Plane Jane is how it works.

Made for more than weekends. RYOBI®

Bensenville, IL 60106